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Some Canine and Feline Disease Problems*

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It has given me great pleasure, and an honour, to have been invited to address you upon some of the more urgent problems of canine and feline disease.

On the printed pamphlet summoning you gentlemen to this meeting I was somewhat amazed to read that it is nine years since you heard a paper on small-animal practice, and I am hoping, therefore, that if I should not add much that is new to your existing knowledge, I will at least excite you to recommence the consideration of canine and feline diseases.

Distemper

At your Secretary's request I have included the well-worn topic of distemper, although I have confined my observations mainly to the pitfalls of immunization. I find this is an aspect of the subject which is of evergreen interest; for every day one meets someone who asks: "Is distemper immunization safe and worth while?" The answer should be cautious, but it can be given in this sense—that if the circumstances are conducive, and if the technique is carried out strictly in accordance with recognized correct principles, then one may say that preventive inoculation is not only effective, but desirable.

The researches of Laidlaw and Dunkin (commenced in 1926) established a filterable virus as the cause of canine distemper, and they perfected a means of producing active immunity by either of two methods.

1. VACCINE VIRUS METHOD.—The dog to be immunized should have attained three months of age, and should be in perfect health at the time of inoculation. It should not be living in a community kennel (such, for instance, as a stray dogs' home—where new dogs are coming in daily and new infection is being introduced). This applies largely to greyhound racing kennels in which young puppies are constantly being received.

It is important that the surgeon makes careful examination and enquiry: *Examination* for any sign or symptom which might suggest an early stage of distemper—such as elevated temperature, slight cough, ocular or nasal discharge, diarrhoea, etc.; *Enquiry* as to whether the dog has been in contact with a known or suspected case of distemper, and whether the owner had noticed any departure from normal health.

Being satisfied on these points, and having exercised due aseptic precautions, the veterinarian injects subcutaneously in the neck 5 c.c. of vaccine. Some consider that the flank is a preferable site, but any place covered by fairly loose skin may be chosen.

The animal must return in from ten to 15 days' time for an injection of 1 c.c. of living virus. This virus injection should not be given if, at the time of presentation, the animal exhibits pyrexia, or any other manifestation of a reaction to vaccine. Such reactions, however, are in my experience extremely rare. But in such an eventuality vaccine could be given again, after a due interval, and could be followed in a further 14 days by virus. It would be unwise and probably dangerous to inject vaccine if the temperature was as high as 102·5° F.

In *every instance* the injection of virus *must* be followed by very careful observation of temperature, as one cannot overstress the fact that virus is a living and highly infectious agent which *will infect* if the vaccine has not stimulated a sufficiently high level of temporary immunity.

Since the response of individuals varies within very wide limits, one must expect the possibility that in some cases the vaccine stimulated immunity may not be sufficient to hold up the injected dose of virus. Therefore, temperatures must be taken for at least five and preferably seven days after the injection of virus. If the virus is not completely held up, a febrile reaction is most likely to appear on the evening of the third day, or during the fourth day after the injection of virus.

The primary febrile phase following infection with distemper virus may be fleeting. It is therefore advisable that the temperature be taken twice daily. Nobody expects a veterinary surgeon to make two visits daily for this purpose, so it is considered advisable to instruct the owner in the use of a thermometer, and stress its necessity. I very much fear that in most of the cases in which distemper has been contracted following vaccination, it has been because the practitioner has failed to take post-virus temperature readings, or because he has allowed some deputed person to neglect it, in the mistaken belief that it was of no consequence.

If during the week following the injection of virus the temperature rises to above 103° F. and remains at or above that level for 12 hours, actual infection with virus should be suspected and serum exhibited at once.

As each injection is followed by a temporary lowering of the opsonic index (known as the negative phase) the owner should be advised to keep the patient away from strange dogs for about a week, as it would be harmful for the animal to receive a dose of living infection before the vaccine had had time to increase the opsonic index or, in other words, time to effect some degree of temporary immunity. It is probably advisable also to suggest that the dog should not be over-exercised, or exposed to inclement weather.

2. THE SECOND OR VIRUS SERUM METHOD commends itself in cases where an interval of 14 days between treatments is inconvenient or impossible. Laidlaw and Dunkin recommended the injection of serum followed one hour later by virus, as a method of immunization, but field experience showed that it was better to give the virus first. Now, the great majority of practitioners leave an interval of at least one hour between the two injections, and give the virus first. They also recommended that a separate syringe should be employed for each injection and that the latter should be applied on opposite sides of the neck.

I had a great shock on one occasion when I journeyed out 30 miles to immunize five greyhounds (all valuable animals) by the virus serum method. I injected the five doses of virus and an hour later returned to administer the serum when, to my horror, I found that instead of serum I had only vaccine. I had to race back to London on a Saturday afternoon, and after prolonged search managed to obtain serum. It was five hours before I got back again to the kennels—and I can tell you I was watching very anxiously during the next few days for signs of illness, but nothing untoward happened. However, I would not risk it again.

Some practitioners have given the serum before the virus; some have permitted an hour's interval; others have not; but the consensus of opinion seems to be that either method is efficacious.

In my experience there is no ascendancy of the vaccine virus method over the virus serum method, or *vice versa*, and I have employed the latter with and without the hour's interval without deleterious effect.

All the essential conditions regarding health and care of the patient advocated for method 1 apply equally to method 2.

FAILURES IN IMMUNIZATION.—In past years there have been reports of failure of either method to immunize, and of actual distemper following the injections. Such cases may have been due to one or more of the following possibilities:—

(*a*) Too weak a vaccine and thus failure to induce an adequate protection against virus.
(*b*) Too virulent a virus.
(*c*) Inoculation at a time when the dog is already a subject of latent infection.
(*d*) Exposure of the patient to natural infection between the vaccine and virus injections; or just after the latter.
(*e*) Failure to observe reactions to the "simultaneous" method, particularly a failure to record any rise in temperature. Should such a rise occur, and serum be not given at once, there is a possibility of nerve tissue damage by the virus, ending in fits, leg weakness, choreic spasms, etc.

I have often heard of such unfortunate nervous sequelae to the simultaneous method of immunization, especially in large kennels of dogs where distemper is more or less enzootic. Where it is impossible for the practitioner personally to perform and supervize the whole proceeding, he would be better advised to adopt the vaccine virus method in which one may perhaps be correct in asserting that slightly less observation is demanded. But even in this, temperatures should still be taken after virus has been given.

In recent years, and in the light of experience gained in the laboratory and in the field, such meticulous care is bestowed upon the preparation of these biological products that one must hazard

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a guess that such breakdowns as may and do occur might well be attributed mostly to items (*c*), (*d*) and (*e*) in the above list.

It sometimes does happen that pyrexia, malaise, anorexia, etc., will follow preventive inoculation. One may then treat with aspirin, warmth and rest. In graver cases the first therapeutic measure is an injection of 10 to 30 c.c. hyperimmune anti-distemper serum. Watch developments and repeat the serum treatment if necessary—each day until recovery occurs.

Apropos the occasional apparent failure of distemper immunization, one is bound to call attention to the fact that, whilst numerous biological products may be advertised and sold, both at home and abroad, many are quite non-specific against the true virus disease, and are sometimes admittedly designed to prevent only the secondary complications.

The use of such inferior vaccines and sera in an attempt at distemper immunization can only lead to failure, and undoubtedly bring discredit upon the method and product originated through the researches of Laidlaw and Dunkin.

Furthermore, nobody should expect to attain satisfaction from popular remedies sold under pseudo-scientific names, in the market place, for home administration, by the untrained. The principles of vaccine prophylaxis or therapy should be carried out only by those who really understand them.

One other point is that whilst true virus distemper is often manifested only by a fleeting mild attack of illness, it may easily be complicated by serious attacks of secondary invaders such as produce pneumonia, meningitis, enteritis, etc.

It may not be generally appreciated that a combination of the secondary symptoms may be observed in a dog which is not a victim of true virus distemper, thus leading the observer to declare the dog as being so affected. Should this happen at some date subsequent to preventive inoculation, the inference is that immunity has broken down and the vaccine has failed; but that inference has no good basis. It cannot, however, be claimed that *any* prophylactic or therapeutic measure can be 100 per cent. certain, and it is only reasonable to expect a small proportion of real failures to occur in one's practice as the years go by. Of several dozen distemper immunizations carried out by me in the war year of 1941, only two patients were reported as having subsequently contracted what appeared to be distemper; but after three or four days of sub-acute illness, both recovered.

It may be asked, how can one know for certain that in a given case one is dealing with definite distemper? Well, there is no clinical test. One must rely upon the history of the case, age of the dog, and the academic phenomena exhibited; but the true biological test is to infect a susceptible ferret with suspected nasal discharge and see whether in about four days distemper develops in it.

Schlotthauer (writing in the *J. Amer. vet. med. Ass.* in 1943) reported the results of using Green's modified vaccine which contains virus attenuated by prolonged serial passage through ferrets, until it is no longer capable of causing distemper in dogs. The virus is supposed to retain its viability in dried tissues for three months or longer and a single dose is said to produce active immunity in dogs.

He said that one dose of 15 mg. produced a satisfactory active immunity which was rapidly established; and that the method was safe. In spite of those observations I have not as yet met anybody in England who has used it in the field, and the method does not appear to have been adopted here.

We all know of the difficulties experienced during the second half of the war, and even now, in obtaining supplies of material from Messrs. Burroughs Wellcome. We seem to be able to have as much as we want, but we have to forecast the amount and wait for it. I have sometimes been asked, "what is the alternative?" and the answer has been that a short or passive immunity may be conferred by the subcutaneous injection of hyperimmune serum; that it is possible to convert a passive into an active immunity by exposing to natural infection a dog which has received serum, if such infection is effected within about a week.

Probably none of us would have difficulty in finding a case of distemper from which nasal discharges could be collected—if we wanted to adopt this method.

Hysteria

In greyhound circles this matter is very much to the forefront. Members may remember the lamentable happenings at Coventry only three weeks ago, when practically all the races were void, through sudden attacks of hysteria. The National Greyhound Racing Society recently decided to raise and spend some £70,000 for the investigation of greyhound diseases. Presumably hysteria will be prominent among ailments to be investigated. The aetiology of this complaint has never yet been proved, but many theories indeed have been advanced—some which could not be at all seriously regarded. For my part, I have contended for many years that hysteria of the dog is closely associated with some abnormality arising from its alimentary tract and involving the presence of some kind of toxin. Although this opinion is shared by many others[1], neither they nor I have as yet been able to name the toxic substance or state its source. I have a strong suspicion, however, that the poison (possibly a fungus or a mould) is developed or occurs in certain consignments of flour from which dog biscuits or bread may be made. And in this connection it is interesting to recall that as long ago as October, 1922, Russell Greig[2] (writing in the *Veterinary Journal*) considered that the spores of *Tilletia tritici* were responsible for some cases of epileptiform convulsions. The latter term was used at that time, because hysteria as an entity was not yet recognized. Tilletia is a normal parasite of wheat, and Greig found great numbers of its spores in the alimentary tracts of affected dogs, whilst in normal dogs only one or two could be found with difficulty. There may be more to Greig's contention, and this must of course be investigated.

The theory which I have so often previously advanced (and which seems to be supported by Russell Greig) is well based upon the clinical observation, confirmed over and over again during many years, that by withholding the particular food product, the outbreak immediately stops. Outbreaks among racing greyhounds on the track which I serve, though they have threatened to assume very serious proportions involving great disorganization and financial loss, have apparently been curtailed in the manner above mentioned.

A baked rusk is commonly used in the greyhounds' diet and when hysteria has occurred, it is believed that the flour from which the suspected rusks were made had contained some unnamed, obnoxious, microscopic plant which—more than likely—could not be demonstrated in the very next consignment of flour supplied by the same wholesaler; nor even in the very next sack of flour. If a small portion only of the wheat parasite was ground into the flour, it could well be that only a teaspoonful of the latter might be contaminated. This would explain why only one dog showed hysteria, whilst others eating similar food did not.

Some authorities[3] have felt that the cause lay in the fact that heated or cooked protein had been fed to the dogs, as, when a small amount of raw protein was added to the diet, the trouble stopped. They found, too, that the addition of the amino-acid "lysine" had a similar effect.

Others[3, 4, 5] have considered that a vitamin B_1 deficiency has been the cause, though such a contention has been negatived by the failure in numerous cases of additional vitamin B_1 to exert any laudable effect.

Schlotthauer[6] also reasoned against such a theory and certainly adduced some evidence in favour of a food-toxin causation.

Morgan[3] believed that in subjecting foods to great heat the lysine was damaged and brought about a lysine deficiency. But, I contend, such a deficiency should set up hysteria in *all* the dogs partaking of such heated food, and there I think his theory fails.

Some years ago, when I was pinning my faith to the theory that an auto-intoxication from the bowel was the contributory—if not the sole—factor in the causation of hysteria, I was disinclined to believe that food alone could be wholly responsible. Further experience and observation of large outbreaks has, however, convinced me that the toxic substance is probably not generated from the animal's own bowel, but is ingested. This would explain why 30 or 40 dogs in a kennel might be simultaneously affected, in spite of the well-known mimicry factor. It could also equally well explain the occurrence of hysteria in a single individual, on the assumption that the food it had eaten had contained the identical toxin.

One might review the case of the single pet dog living in any normal household, fed as usual on meat or biscuit, with perhaps some scraps such as milk pudding, fish, egg, tit-bits in small quantity. It may have an attack of hysteria which disappears after suitable treatment, and the dog then goes back to its original diet and there is no recurrence. Can we assume that an *immunity* has been acquired? In many cases we cannot, because it is quite well known that victims of one attack may be affected on one or more subsequent occasions after complete recovery from the first one. Such recurrence, however, is not the rule in my experience, and it does not by any means follow that a dog having once had hysteria is necessarily more susceptible in future years. Whatever was the cause or combination of causes of the original attack may never exist again.

One of your venerable members—Mr. Hewetson—read a paper on this subject at an annual congress of the "National," in which he advanced the theory that so-called "fright disease" was associated prominently with environment, a fear of some particular place or kennel; but in my view this could not seriously be held out as the specific cause, accounting for the many hundreds of cases of hysteria occurring in circumstances which entirely precluded any possibility of fear of the surroundings or of people associated with the animals. We probably all agree that the attacks are of short

duration and quite amenable to treatment, and that although the subjects still remain in the same environment and with the same people, further attacks do not arise.

Shirley, of Crewe, thought that wireless waves of short wavelength were a contributory factor; the late Henry Gray incriminated otodectic mange; others have suggested an endocrine imbalance; but I still feel confident that an alimentary toxin (probably ingested) is, and will eventually be proved to be, the specific cause of the condition.

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Infectious Enteritis

May we now give some consideration to that most deadly of all feline diseases—infectious enteritis. I have the impression, rightly or wrongly, that the great majority of veterinary surgeons do not feel the same interest in the cat that they have in the horse or the dog, and from observation and experience I am led to believe they do not, therefore, study the cat or its diseases to anything like the same extent. For years I have been a breeder of cats and have studied them extensively—probably because I like them and admire them—though freely admitting that they constitute the most difficult, most intractable and most enigmatical of all our patients.

I still meet with practitioners who stubbornly maintain that distemper and infectious enteritis of the cat are one and the same disease, but scant ground remains for upholding such a belief, in view of Dalling's statement (1935) that whilst he had been able to immunize cats against enteritis, he had failed to do so against distemper.

The clinical differences are very wide, and obvious to those who will look carefully. In the abdominal type of distemper, there are gastric and enteric complications which give rise to sickness or diarrhoea or both. In some cases the attacks are severe and fatal, whilst in others they assume a chronic character. In the acute form there is some emesis, great thirst, profuse watery (sometimes bloody) diarrhoea with consequent early prostration, staring coat, cold extremities, loss of appetite, offensive odour, tenderness of the abdomen, coma and finally death. In milder cases the clinical picture is less disturbing and may endure for many days, but the diarrhoea is usually very persistent and brings about a great weakness and loss of condition to which fatal results are not infrequently due. There may, in addition, be a discharge from the eyes and nose, ulcerated mouth, foetid breath and great salivation, in a large percentage of the cases met with.

As against this wide combination of symptoms, what one observes in specific enteritis is this: an apparently healthy cat of any age (but generally young) feeding well at one moment, refusing its next meal, commences to vomit; exhibits intense depression and prostration; sits huddled up and motionless with head down; seems to prefer to lie outside of its bed or in its ash-tray; continues to vomit; very rapidly loses flesh; cries out weakly and plaintively. Temperature which had risen probably to 105° F. gradually subsides and in about 12 to 18 hours becomes subnormal; collapse ensues followed by death, frequently within 24 hours. Throughout this illness constipation has generally been marked. The catarrhal, pharyngeal and pulmonary symptoms seen so commonly in distemper are entirely absent, and the mortality is probably around 90 per cent. Most cases of distemper, properly treated, will recover.

Apart from the researches undertaken in 1935 by Dalling, little has been done in this country towards elucidating the aetiology of infectious feline enteritis. A good deal has, however, been accomplished in America, where Lawrence and Syverton[1, 2, 3] of Rochester University, after scientific investigation, classified the disease as a specific virus infection characterized by marked changes in the haematopoietic system. Arlein[4] referred to the disease by the synonym of panleucopenia. Hammon[5, 6, 7, 8], of Harvard Medical School, and others[9, 10], later independently studied and described this same disease entity. Their findings were similar in all respects, and the work done by these investigators was accurate and exhaustively complete.

If the ultra-visible virus theory of aetiology is universally accepted to-day, we can expect little of curative value from penicillin or sulphonamides; and vaccines—even if otherwise of service—would have insufficient time to exert an effect in view of the usually rapid fatal termination. The only hope left must be vested in the use of a specific antiserum which, at the moment, is unobtainable and the production of which (on a wholesale scale in the future) seems to be beset with very real difficulty.

Very regretfully we have to admit that in this year 1945 we are in possession of neither vaccine, serum nor chemotherapeutic which is of the slightest value either as a preventive or a cure. Thus the high mortality goes on apace. Researches carried out with an immunizing vaccine prepared at the Wellcome laboratories in the years preceding 1939 yielded gratifying results. Numerous cats were vaccinated and, though exposed to infection, almost without exception escaped the disease; but no therapeutic property was claimed for it. The war stopped its preparation and use, so that insufficient evidence accumulated as to how long the protection lasted, but it was known to persist for at least several weeks.

Arlein[11] stated that recovery from one attack confers a permanent immunity; older cats may have acquired a natural immunity by exposure. Serum from recovered cats confers a passive immunity on susceptible kittens and it is suggested that this serum (if obtainable) may be used as a prophylactic agent. Arlein found that at the height of infection the average white blood count is about 2,000 per c.mm. compared with the normal figure of 15,000 per c.mm. Differential blood counts indicate that the numbers of all types of leucocytes are reduced.

I strongly advise members who are presented with a cat whose pre-eminent symptoms are emesis and prostration, not to succumb to the owner's usual suggestion that the animal has been poisoned.[12] We have often read in our newspapers of mysterious poisonings and sudden deaths among the cat population, but investigation has sometimes found these outbreaks to be due to this sudden, infectious and fatal illness.

You will no doubt ask me what you are to do when you diagnose a case, but as I have previously said, we have no specific treatment. A treatment should be attempted, however, if only to justify the consultation with you.

The two outstanding symptoms—emesis and pain—are so urgent that no time should be lost in applying counter measures, as if not relieved, the early prostration soon becomes a collapse. One to two grains of benzocaine in capsule should be given, and may be washed down with 30 m. brandy or whisky in water. The latter may be given several times daily if the pulse has become weak and collapse is threatened. Brandy is, of course, a useful anti-emetic.

To counter the dehydration resulting from continuous emesis give a subcutaneous injection of warm normal saline and glucose, 4 oz. of solution being about sufficient; or fluid may be injected per rectum. If the benzocaine does not reduce the pain, one may give nembutal intravenously, intraperitoneally or per os. The oral dose would be ½ gr. and the parenteral dose 1/10 gr. per lb. body weight about every 12 hours.

A method of treatment which stimulates reaction in the tissues and which can be at once applied is the use of non-specific vaccines such as Omnadin, S.U.P., Yatren, etc. To administer these does at least impress the client that something apparently useful is being done; and, believe me, it is highly important that we should maintain our professional prestige by helpful suggestions and acts rather than to adopt a policy of masterly inactivity by telling people to keep the animal warm and let you know how it is to-morrow. That is not helpful professional advice, and although you may feel confident about the fatal prognosis, you must also earn your fee and do more than could or would have been done by a quack.

Nutrition may be maintained by the subcutaneous injection of glucose, by the intramuscular injection of liver extract, or by clysters of Benger's Food injected at blood temperature.

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Concluding, gentlemen, I would like to say that whilst this has been only a short paper, and necessarily incomplete, it should have provided material (possibly provocative) upon which may be based a very useful and instructive discussion. If I have succeeded only in that, my visit will have been worth while.

Discussion

Mr. H. Raynor Hewetson, in opening the discussion, expressed his appreciation and thanks to Major Kirk for the paper. He would in many ways differ from Major Kirk, but this was not surprising as in none of the conditions dealt with was there a standard book of any value, the literature was meagre, and in consequence most opinions were based on clinical observation only. He was also of the opinion that many of these conditions varied in different localities.

Distemper.—Major Kirk had neatly evaded the distemper problems by dealing only with immunization and there could be no criticism of his technique theoretically, though there were practical difficulties of carrying it out to the letter. Major Kirk stated the question "is immunization safe and worth while"? The speaker felt that before answering that we must decide what we believed we were immunizing against. Mr. Hewetson attempted to differentiate the infections brought to him under five heads: (1) Influenza; (2) Streptococcal tonsillitis, including kennel-cough; (3) Infectious bronchial catarrh (*B. bronchisepticus*); (4) Distemper (virus); and (5) Infectious meningo-encephalitis (virus unknown). Before the war he had investigated a considerable number of cases exhibiting symptoms of meningo-encephalitis with and without other symptoms, chiefly in collaboration with Dr. J. R. M. Innes, who was then at Cambridge, and with assistance from Professor Dalling and Dr. Montgomerie; and in a very large number of these cases no distemper virus could be recovered from the affected dogs. In addition, in cases where Dr. Montgomerie had excluded distemper virus, Dr. Innes had found in those dogs destroyed in their earliest stages evidence that a virus infection of the nervous system did exist. He was sorry that Dr. Innes was not there that day to elaborate his side of this research and also to have to say that shortly after the outbreak of war Dr. Innes had sent all the records and specimens connected with these cases to a veterinarian in Antwerp and since the German invasion nothing further had been heard of them. In his view it was only going to lead to disappointment if distemper immunization was expected to protect against all these conditions, but it did, by protecting against virus distemper, probably eliminate one of the main predisposing causes, and from that point of view was very well worth while.

The position as regards accurate differential diagnosis would not improve until there was some genuine and serious research into all these problems at least as extensive as that carried out by Laidlaw and Dunkin.

Addressing himself more directly to Major Kirk's paper, Mr. Hewetson referred to the difficulties in securing accurate temperature records. Many dogs would invariably show a rise in temperature at the surgery and be quite normal at home, but if one was going to visit each time to take these temperatures, the cost would be prohibitive and the accuracy of temperatures taken by deputed persons could not be relied upon for many reasons, so that in any case some degree of risk had to be taken. He did not understand why Major Kirk considered vaccine-virus required less observation than virus-serum, because the opposite appeared to be the case. The virus-serum method recommended by Professor Dalling covered a much shorter period, with less negative phase, and therefore should have less risk, and his own most serious reactions had come from vaccine-virus.

What evidence, he asked, could Major Kirk produce that the nerve tissue was injured by the virus of distemper and that this was especially liable to occur when virus-serum was used? In his paper he referred to distemper as a mild and fleeting disease and said that the serious symptoms such as pneumonia and meningitis were caused by secondary invaders. Mr. Hewetson would agree that reaction following either method of natural infection might open the door to secondary invaders. Green's attenuated virus method was not available in this country, but Dr. Green himself had done research on encephalitis in foxes and isolated a virus of encephalitis in this animal which had proved not to be the cause of meningo-encephalitis in dogs, but this did not say that a specific virus did not exist. Meningo-encephalitis was undoubtedly the cause of most deaths and some method of protection against it further than the partial protection of distemper immunization was urgently needed. Other methods of immunization referred to by Major Kirk were either dangerous or useless and should not enter the discussion, but he would say that he believed that all immunized dogs should later be exposed to all natural infections.

With regard to treatment he would say little except that he had abandoned the use of serum as useless even in large quantities in the earliest stages. Whether this was due to the infection always being a mixed one or what other cause he could not say, but for a long time before discontinuing it he had failed to derive any benefit from its use. Further, except in tonsillitis he believed that drugs of the sulphonamide group were useless however adequate the dosage. He believed a dose of S.U.P.36 in the early stages to be of value, otherwise the most effective treatment consisted of hygiene, rest, and not too much nursing, combined with simple symptomatic treatment.

Hysteria.—Mr. Hewetson strongly denied the statement of Major Kirk that it was his opinion that hysteria was due to environment. Many of the causes ascribed to hysteria were exciting causes in susceptible animals, but exciting causes only, and that went for Major Kirk's theory of alimentary toxaemia. He had little personal experience of greyhounds, but he remembered Mr. Bateman, whose experience of greyhounds was most extensive, speaking at Scarborough and laying it down that greyhounds had no brains and were fed on bread and slops entirely different from the diet he advocated, yet they never had hysteria. Now we were given to understand that greyhound racing is seriously jeopardized by the amount of hysteria prevalent in the dogs, and that the National Greyhound Racing Association are putting up £70,000 for research into this and other diseases of greyhounds. From what he had seen he thought the £70,000 could be well spent in correcting the feeding and management of the dogs generally.

Major Kirk would no doubt approve the wheat gluten flour theory recently advanced by Wagner and Elvehjem as a cause of hysteria liberating a toxin. If so, how did he explain that some dogs would defy any diet to induce hysteria in them, and others would still have hysteria no matter what diet they received? Summarizing his already published views, Mr. Hewetson said he still believed that hysteria was the outcrop of defective breeding, defective feeding and defective management over many generations, producing dogs with neither mental nor physical stamina nor stability.

Infections of Cats.—These Mr. Hewetson classified as (1) coryza (mild), (2) distemper or influenza, and (3) infectious enteritis.

Infectious enteritis could be sub-divided into acute and sub-acute, and appeared as a sporadic endemic or epidemic disease. He believed that many cats were carriers, and many had the infection latent, which sprung into activity when circumstances reduced the animal's natural resistance. These were the animals which caused so much distress to people who boarded cats. Major Kirk's description of the symptoms was excellent, but in the speaker's view mortality was nothing like 90 per cent. Whilst admitting that as a virus infection a specific serum was desirable, this did not mean that other treatment was useless. The production of an agent giving lasting immunity and a serum for treatment was urgently needed, but like so many other things for small animals would probably be pigeon-holed *ad infinitum*. If the disease was a virus the leukopenia described could only be an effect, but if this was important injections of sodium nucleinate would appear rational and was in fact a one-time treatment of his which had appeared to be of some value. The reference to cats believed to have been poisoned was a common one, but cats were so particular that this must be an extremely rare happening, and 99 per cent. of cats brought with that history were suffering from enteritis. He believed that there were useful treatment aids to nature to overcome enteritis, and he did not lose 40 per cent. of his cases. Though the disease may be caused by a virus it was probable that the deaths chiefly resulted from the effects of secondary invaders, many of which were always present in the alimentary tract. One treatment which he had found most beneficial if carried out early enough was complete gastro-intestinal lavage with one of the flavines. An objection to this treatment was the distress it appeared to cause the cat. Another treatment which he had found beneficial was adequate intraperitoneal dosing with prontosil rubrum. No other sulphonamide had proved really effective in his hands though he had heard of excellent reports from the use of sulphamezathine and sulphathiazole by oral administration. Infusions of saline to overcome the dehydration; warmth, Enterofagos, and in collapse small doses of brandy, were rational and useful. He believed nutrition entirely unimportant; cats could live for weeks without food, and there was nothing but harm in attempting to administer food until the cat was ready to take it voluntarily.

He agreed with the wisdom of Major Kirk in limiting the scope of the paper, but he was sorry there had been no reference to the much disputed beta-haemolytic streptococcal infections. Published research on this was vague and incomplete, but two manifestations did appear to him to be beyond question. The so-called puerperal sepsis of bitches where apparently healthy pups were still-born or died shortly after birth, spreading round all the bitches in the kennel, did largely respond to anti-B.H.S. vaccines and sera. Much of the so-called eczema of cats was in reality a streptococcal dermatitis which yielded better to injections of B.H.S. vaccine than to anything else, though the results were not uniformly satisfactory. There was a wide field for experiment and research here, and the condition in cats was becoming more serious and more prevalent.

Mr. A. L. Hogg: He had been very interested in what Major Kirk had had to say and had always taken a great interest in his writings in the *Record* and in his book.

As regards distemper vaccination, he had had a fair experience of the different methods but in the past three years he had adhered to the vaccine-virus method without having much trouble on the whole. He could remember only three breakdowns with this method. All three cases were in greyhounds, and whereas Major Kirk had said that in such breakdowns nervous troubles usually predominated, they had experienced respiratory symptoms on each of these occasions. The cases were very difficult to treat. They had used serum but not B.W., whereas the dogs had been given B.W. virus. When a breakdown did occur after the use of B.W. virus he considered that the serum manufactured against that virus should be used for treatment.

He agreed with Mr. Hewetson on the subject of hysteria. Those who had been observing dogs during the last four or five years were bound to have noticed how its incidence had extended to many different breeds: greyhounds, cocker spaniels, golden spaniels and even Scotties. He did not look upon the condition as a disease but as an hereditary defect.

On feline enteritis, he agreed largely with Major Kirk, but not that it had an 80 to 90 per cent. death-rate. He could not understand this statement for, in his experience, if a case of cat 'flu was treated fairly early it had a reasonably good chance of being cured. He had used some of the sera put up against cat 'flu and had also used sulphapyridine with good results. At present he was using sulphathiazole. He would like to know if others had experience of the use of this drug in the treatment of this condition. He thought that the doses of sulphonamides used in cat 'flu were often too small.

A Visitor: He felt that a proper laboratory diagnosis was of importance in some cases of distemper. Could the speaker say what were the symptoms of the condition in ferrets?

Was Major Kirk aware of any ill-effects as a result of the use of bronchisepticus and distemper sera?

Mr. G. N. Shirley thought that the answer to the question whether we should advise clients to have their dogs immunized lay in whether we would treat our own dogs similarly. In 99 cases out of 100 the answer would be "yes." He preferred the vaccine-virus method since he thought there was more time for the development of immunity. With the more rapid virus-serum method there was more chance of a breakdown.

Could Major Kirk say if there was any truth in the idea held by some people that dogs should not be inoculated between the ages of four to six months because of the danger of spoiling the teeth?

He felt that whilst hysteria might be due to some particular cause, 75 per cent. was due to digestive disturbances—actual indigestion, *e.g.*, in the case of young dogs eating coal, cinders, etc. Treatment by giving a dose of liquid paraffin, keeping the animals away from these noxious substances and giving a mineral mixture was successful in most cases. Some hysteria was, he agreed, due to inbreeding or disease and could not be blamed on digestive derangements. The locality question also had some bearing on it—he instanced the case of a dog which always got hysteria on approaching a particular wood.

In regard to the possible influence of wireless waves, the increase in hysteria among dogs had coincided with the increase in the use of electricity and wireless waves. It was possible that dogs could pick up waves which did not affect the human ear; a dog about to have hysteria seemed to be listening acutely to something we did not hear.

In reference to cat diseases, he had recently been using sulphaguanidine with good effect. He had had reasonably good results in feline enteritis.

With regard to the differential diagnosis of enteritis and feline distemper, one point which in his opinion was diagnostic of distemper, whether other symptoms were displayed or not, was the very marked accumulation of black material in the ears.

Mr. D. D. Ogilvie: It had been claimed by several speakers that certain of the sulphonamide drugs had an effect on feline enteritis. He thought all would agree that this was a virus infection but there were, to his knowledge, only two diseases of virus origin (both of the human subject) which were primarily amenable to drugs of this group. It was a matter of very considerable importance to ascertain whether or not the sulphonamides had an effect on true virus diseases.

Apart from that, he would like to ask Major Kirk whether he found any value in sulphonamide drugs in the treatment of the secondary effects of distemper. Some held strong views that they had no effects whilst others claimed that they found them extremely useful. In regard to canine hysteria, he thought that in many cases the monotony of the food had something to do with the condition. If the animal was fed on one particular food all the time it was usually dog biscuits, and so they got a bad reputation. A change of diet usually brought good results. Many dogs were fed on a diet quite foreign to their natural food and received too much carbohydrate and very little protein.

Mr. A. J. Wright: He had not used the vaccine-virus method of distemper immunization for some years and now used the virus-serum method exclusively, chiefly because of convenience, but results had been very satisfactory and breakdowns very few. After experiment he had found no advantage in leaving any length of time between the two injections and now gave them simultaneously on opposite sides of the body.

He agreed with Mr. Hewetson that when serum was used for treatment, unless it was given in the very early stages, it was of no value. This was only possible in kennels where daily temperatures were taken.

He was inclined to the view that hysteria arose as a result of continuation of conditions which rendered the dog susceptible. There was definitely a greater

incidence in narrow-skulled dogs; he had never encountered a case of hysteria in a Pekingese or bulldog.

He thought it true that feline enteritis and distemper could be differentiated. Years ago he was under the impression that they were variations of the same disease, but the evidence now was that there were definitely three major cat diseases. Could Major Kirk say which condition it was when a cat was observed simply with a rise in temperature and an inflammation of the back of the throat? His experience was that 90 per cent. of cats kept in after being operated on contracted enteritis, now he had a firm rule that they should be sent home the same day. Was there anything that could be given to cats on entering boarding kennels in order to avoid enteritis?

Mr. H. P. BLACKIE asked Major Kirk's advice as to the duties of the Hon. Veterinary Surgeon at dog shows. At what point would he ban a dog from entering a show as being suspected of distemper? It was an undoubted fact that dogs often came in the early stages of the disease.

Mr. H. BRASSEY-EDWARDS: He had had much experience of vaccination and general inoculation of large animals. In Africa they had experienced some difficulties. They had found that some breakdowns occurred owing to variable susceptibility. All animals of a certain age always broke down, therefore they made a rule that animals inoculated before a certain age should be done again when they reached the age of one year.

They had also found that horses could be inoculated in one district yet when sent to another district they contracted the disease. For this an incorporate virus was produced which created a definite immunity.

THE REPLY

Major KIRK: Mr. Hewetson had asked him what we were immunizing against in so-called distemper immunization? We were conferring immunity against the virus, because if an animal could resist that it did not become a prey to the sequelae, or secondary invaders, to anything like the same extent. True, it was believed that a dog (having *had* distemper or having been rendered artificially immune to it) could subsequently, but only occasionally, be attacked by a combination of the secondary invading organisms. Absence of a virus infection would mean that such chances were small; whilst attack by virus would most assuredly be followed by secondaries. Mr. Hewetson asked, he thought, how we could distinguish between influenza and distemper. Personally, he did not think they could be distinguished, at least, not clinically, and he doubted whether they could bacteriologically. Surely the symptoms which we knew to be characteristic of influenza in the human could all be found in a case of distemper with its complications.

The opener was in doubt as to whether it was wise to have a dog brought to the surgery for post-inoculation temperature investigation. He was wise to question it because it was, or ought to be, well known that merely to take a dog into a surgery, apart from the exercise in getting there, was often enough to raise a temperature one or two points. It was often seen in greyhounds prior to racing. Thus it was best to visit the dog at its own home, in accustomed surroundings; and this applied equally if one wished to examine the heart.

Mr. Hewetson asked "Does the virus attack the nervous system principally"? and in answer one might say that in apparent immunity failures, the nervous sequelae often seemed to preponderate. That had in fact been the experience of many people (over a number of years) who had conversed with him on the subject; but he could not say why.

Mr. Hewetson often gave S.U.P. instead of serum, and thought it as good. Upon that one must comment that the serum was specific whilst the S.U.P. was not. Results, however, were what counted. He thought nervous distemper was incurable, and he (Major Kirk) agreed, but added that deaths were not confined to nervous sequelae as pneumonia also took a toll.

Treatment was purposely omitted. Having been asked, however, Major Kirk gave a very brief review of lines he would adopt.

On the question of hysteria, and Mr. Hewetson's disclaimer that he had advanced a theory of environment as the possible cause, he still must say that, having read Mr. Hewetson's paper, the impression gained was that that was his principal contention. It could not, of course, be the cause, as so many scores—nay, hundreds—of cases occurred in familiar surroundings in which affected dogs remained, but mostly no second attack arose.

The opener had made the point—a perfectly true one—that feline enteritis might occur sporadically, enzootically or epizootically. If we accepted it as a virus disease, we must also accept that it was very infectious; and there were various means of spreading the infection. His last three cases of enteritis followed oöphorectomy in from three to 14 days. A fourth case was brought a week after operation which was a perfect success. Suddenly the cat was taken ill and when brought in—a few hours later—was moribund.

In treating feline enteritis by intestinal lavage and by the administration of sulphonamides, Mr. Hewetson was obviously assuming that there was a bowel infection lying freely in the lumen, which could be mechanically removed, or could be combated by bowel antiseptics. In view of the profound collapse, and rapid death in these cases, he rather feared the nature of the disease was more of a toxaemia; and his use of prontosil would be rational as that circulated in the blood stream. But its specific action was, he thought, against streptococci, so that any curative effect from it would apparently imply a blood invasion by streptococci. That might be the case; but he did not think it fell in line with the almost universally accepted views of to-day.

Another speaker mentioned the value of using only B.W. serum. Well, of course, there were numerous sera on the market, not all of which were specific, and it might be very wise to adhere to a good product we knew rather than to save a little in cost on one we did not know. This speaker had said he had been observing cases of hysteria for four or five years and concluded it was hereditary. Major Kirk had practised among dogs for 33 years, but so long as he had recognized hysteria as an entity he had failed to observe that it ran in families. In fact, it was very sporadic indeed. This same gentleman took him to task for stating in his book, and for constantly reiterating it, that the mortality of cat 'flu was 80 to 90 per cent. Whose book did he read? It certainly was not his, as never had he anywhere ever made such an assertion. He said that cat enteritis had that mortality, and he still maintained it. That speaker offered the opinion, too, that sulphonamides were used in cats in greatly inadequate dosage. He had to be reminded that these drugs could be toxic to cats. Recently, a half tablet of sulphathiazole given thrice daily to an adult cat produced, in two days, complete blindness and slight ataxy which only abated on cessation of the drug.

An East Indies speaker asked what were the symptoms of distemper in the ferret. Not having seen a case, he was not in definite possession of the answer, but assumed they were very similar to those seen in the dog, particularly as regards catarrh of the mucous membranes, etc.

As to whether inoculation between the third and sixth months of age would have any deleterious effect on the teeth, he thought it would not and had not observed any.

He thought hysteria might arise from true dyspepsia. In contradiction to that theory, many of them might not treat for dyspepsia, yet the animal would be soon well again. However, nothing was proved beyond doubt and further investigation was still required.

Mr. Shirley prescribed sulphaguanidine for enteritis of cats with apparent effect. That salt had been largely superseded by succinyl-sulphathiazole; but an even more recent and more powerful of the gut-active sulphonamides was sulphathalidine, which was reputed to give a lower blood concentration, and therefore permitted a high concentration in the bowel. It was reputed to be four times more active in suppressing the growth of coliform organisms in the intestine.

As to the significance of wax in the ear in cases of distemper, he thought this was merely another manifestation of the general catarrhal condition which one might naturally expect.

Asked by Mr. Ogilvie as to the value of sulphonamides against the secondary infections, he replied that they had great value, especially where there was a lung complication. He rarely failed to prescribe sulphapyridine if bronchitis or bronchopneumonia was present.

It was suggested by the same speaker that a monotony of food might predispose to hysteria, but he could not at all subscribe to that view. That very morning he had received a letter from a well-known "doggy" man making the same suggestion. The diet of dogs (and especially of greyhounds) was more or less the same throughout their lives, yet the great majority never exhibited the malady, and those which did would soon recover and go back to the same diet without any recurrence. To see the avidity with which most greyhounds fed (often almost eating the dish as well) one would not think they harboured any such distaste for their food.

Mr. Wright wished to know the aetiology of pyrexia with sore throat, the reply being that in most of such cases the infection was probably with the *Beta haemolytic streptococcus*. A smear taken from a tonsil and sent to a laboratory would elicit the desired information with little delay.

Mr. Blackie was concerned as to the grounds upon which a veterinarian officiating at a dog show would be justified in barring a suspected dog from entry. If the dog was in the incubative stage it would probably show no symptoms and would be passed in. If for some reason the practitioner took its temperature and found it above 103°, he would be justified in isolating that dog for an hour in a quiet corner and then ascertaining if the temperature had dropped. If not, it was entirely up to him to use his discretion. The same discretion could be applied in the case of dogs with catarrhal symptoms, especially if bi-ocular as well as nasal.

Mr. Brassey-Edwards's remarks concerning horses reminded him of his belief that a dog might be successfully immunized against one strain of virus, and yet might succumb to some other strain brought in by foreign dogs. In their greyhoung racing kennels they might have 200 or 300 dogs enjoying good health until one day some young puppies arrived from Ireland. These fell prey to the type of infection which was enzootic in their kennels and against which their inmates had an immunity; and simultaneously the latter started falling sick, apparently to a strain of infection brought in by the new arrivals and to which they themselves were immune. That view was not proved but he held it strongly.

SAFER MILK

In its issue of May 6th *The Times*, in an editorial on the subject of safer milk, commented that the recent debate in the House of Lords (reported in full in our issue of September 20th) showed that the official plans for milk of better quality, set out in the White Paper three years ago, are only slowly being put into effect. A more active policy was, however, promised by Lord Ammon when labour and plant made it possible. The article proceeds: "Farmers have come to accept the view that a safe milk supply depends both upon the improvement of animal health and on the heat-treatment of milk. Some recent figures issued in the *Monthly Bulletin* of the Ministry of Health show what the pasteurization of milk has already achieved in reducing the number of deaths among young children from abdominal tuberculosis, a form of the disease which is generally due to tubercle bacillus of bovine origin. In 1921, in the administrative county of London, 136 out of every 1,000,000 children died from this disease. In 1944 the corresponding figure was six. In rural areas the rate in 1921 was 252 and in 1944 still 60, or ten times the London rate. The London figures for 1944 show a reduction to one-twenty-third of the 1921 rate while for rural areas the reduction is only about one-quarter.

"These figures suggest a high degree of correspondence between the increase of pasteurization and the decrease of mortality from abdominal tuberculosis. In 1944 99 per cent. of London milk supplies was pasteurized; and though more milk has been treated in rural areas and in urban areas outside London during the past 20 years, nothing like the London standard has yet been generally reached. Large towns such as London are at one disadvantage in regard to milk safety in that they receive their supplies in bulk, and samples, before pasteurization, show a high degree of infection. To this extent rural areas might be expected to have better figures. That they do not would appear to be proof of the greater safety provided by pasteurization. In the House of Lords debate Lord Rothschild estimated the annual casualties from raw milk contaminated by bovine tuberculosis germs as between 7,000 and 8,000.

"The case for speedier progress with the provision of pasteurization plant will be generally endorsed. This development under the auspices of the Ministry of Health needs to be supported by a vigorous effort by the Ministry of Agriculture to build up the health of dairy herds. The problems involved in establishing clean areas, beginning with isolated districts and extending them gradually until in ten or 15 years' time the whole country is clear of tuberculosis and contagious abortion, were recently discussed in these columns. The Milk Marketing Board, the producers' organization, has now declared its support for a national drive to clean up the dairy herds; and the Government are assured of general support when a comprehensive plan for ensuring safety in milk is put forward."

THE VETERINARY RECORD
May 18th, 1946

DRUG RESISTANCE

IN an editorial on chemotherapy which appeared in *The Veterinary Record*,[1] the dangers which might arise if the sulphonamides were used indiscriminately and without a proper understanding of their limitations, were foreshadowed. This warning has recently been reinforced in an article by Kirk.[2] The tendency to resort to these agents on all occasions, irrespective of the type of condition under treatment and the nature of the invading organisms, was deprecated as unscientific and unlikely in the long run to yield results satisfactory to the client or gratifying to the practitioner.

We make no excuse for referring again to this subject. Since the advent of the sulphonamide group, a number of new antibiotic substances have come to the front, *viz.*, penicillin, gramicidin, tyrothricin, streptomycin, subtilin, etc., and it is reasonable to anticipate that they are but the forerunners of a series of antibacterial substances synthesized for the most part by micro-organisms. At the moment, these new products are in short supply, but if the early promise of their efficacy, already firmly established for penicillin, is eventually confirmed, it is inevitable that they will become available for general use.

There will naturally be a strong temptation to employ them on every occasion without regard to the species of infecting micro-organism. Sufficient time has now elapsed to substantiate the warnings which were uttered in the early stages of sulphonamide therapy, *viz.*, that as resistance to these drugs could be engendered by artificial subcultivation of sensitive organisms in increasing concentrations of the drug, so insufficient or inappropriate medication might lead to the creation of drug-resistant strains. Two examples will suffice to emphasize the danger.

It has been reported from the U.S.A. that in one community regular treatment with sulphonamides was instituted in order to check upper respiratory infections. The initial results were satisfactory, since a substantial reduction in naso-pharyngeal haemolytic streptococci was affected, but in time these organisms became more prevalent in spite of continued medication. It was then found that the strains of streptococci isolated from the throat had become completely resistant to sulphonamides. It has been reported that during the Polish campaign, as a preventive measure, the German Forces were regularly treated with sulphonamides to protect them against gonorrhoea. The initial satisfactory results were not sustained and eventually it transpired that the troops were widely infected with sulphonamide-resistant strains.

At the present moment, strong pressure is being exercised to release penicillin for general use. It is suggested that this antibiotic should be made available to the general public without any restrictions, and it is being argued that there is little likelihood of the development of penicillin-resistant strains through the uncontrolled use of the drug. Recent work, however, seems to cast some doubt on this comforting theory. For example, Harley *et al.*[3] have reported that in Burma, when penicillin therapy was introduced as a routine procedure in the forward areas, an increased proportion of cases, received at the base hospitals, showed organisms, including some strains of staphylococci, which failed to respond to penicillin treatment in the usual doses: they were, in fact, highly penicillin-resistant.

Miller and Bohnhoff,[4, 5] have recently noted that strains of meningococci and gonococci, which are fully susceptible to penicillin and to streptomycin, can be made highly resistant to these drugs if cultivated in media containing increasing amounts of the antibiotic. Other examples of a similar nature are now being reported in the literature.

At the moment, supplies of penicillin have not been released for general use by qualified medical and veterinary practitioners, but the position will undoubtedly improve in the near future. We would, therefore, enter an earnest plea that when they are available, penicillin and any other antibiotics of a similar nature should be used with discretion. They should be given in the maximum tolerated or recommended doses and their use restricted to conditions which are known to be susceptible to their action.

(1) (1944.) **56**. 221.
(2) Kirk, H. (1945.) *Vet. Rec.* **57**. 245.
(3) Harley, H. R. S., Baty, J. A., and Bowie, J. H. (1946.) *Brit. Med. J.*, April 27th. 639.
(4) Miller, C. P., and Bohnhoff, M. (1945.) *Proc. Soc. exp. Bio. N.Y.* **60**. 354.
(5) ——, —— (1946.) *J. Amer. med. Ass.* **130**. 485.

CLINICAL COMMUNICATIONS

Bovine Infertility Associated with Staphylococcal Infection*

by

J. A. LAING (Cambridge) and C. H. DOWNE (Diss)

The herd in which the infection occurred consisted of 41 cows and ten heifers of various breeds and ages. The majority of the cows had calved in the late autumn of 1943. After this, when service commenced, there were a large number of returns at three weeks, the animals showing discharge, or at six weeks following the expulsion of what was described as "a yellowish-white clot." Three cows aborted at five months.

In February and March, 1944, the animals which had aborted were isolated till they had stopped discharging, been blood-tested for *Br. abortus*, and were found to be negative. The animals which were discharging were treated, by uterine irrigation, with Lugol's solution of iodine. Semen was collected from the bull and he was found to be fertile.

At the end of March the bull was slaughtered as he had become unmanageable. At *post-mortem* examination no lesion of the genital organs or of the remainder of the body could be found. The genitalia were sterile on bacteriological examination.

Meanwhile, a second bull had been used on the herd.

At the beginning of April, 1944, most of the cows were discharging, and of the 41 four were pregnant. About half the heifers were pregnant. Samples of semen from the new bull were examined and he was found to be normal.

All the cows were examined *per vaginam*, and where necessary *per rectum*. From the cervix of the majority of the non-pregnant animals there was a mucous or muco-purulent discharge. In some cases it was very copious, in others scanty. Many animals showed an enlarged relaxed cervix.

The discharge was examined microscopically for *Tr. foetus*. None was found. Blood samples were taken for agglutination test for *Tr. foetus* from the animals which had aborted or which had a history suggestive of trichomoniasis. Cervical swabs were taken from ten animals which were discharging.

No cows were served pending the result of the examination of the blood and swabs.

The bloods showed only a normal agglutination titre to *Tr. foetus*. The swabs gave mixed cultures of streptococci, haemolytic coli, and staphylococci which in some cases were haemolytic. It is well known that large numbers of micro-organisms in mixed culture are obtained from swabs taken from the bovine genital tract. But in view of the fact that staphylococci were obtained in large numbers from the majority of animals, and that in many cases they were haemolytic, it was thought that they were aetiologically significant. It was decided to irrigate the cows with acriflavin solution, give staphylococcal toxoid, and, if possible, inseminate artificially, in case the infection might be spread by the bull.

* Presented at the Summer Meeting of the Eastern Counties Division, N.V.M.A., at Bury St. Edmunds, August 15th, 1944.

In order to find whether the infection was actually intrauterine, swabs were taken from inside the uterus by means of a metal tube in which the swab was contained. Either sterile swabs or cultures of staphylococci were obtained. No staphylococci could be grown from a swab taken from the bull's prepuce.

Treatment

All the cows, except the pregnant animals, were irrigated with 1:1,000 solution of acriflavin in water. Some which were discharging badly were irrigated a second time one week later. Also all the empty animals were given 8 c.c. of staphylococcal toxoid intramuscularly, and 48 hours later 16 c.c. intramuscularly at the same site except for two animals which showed a marked local reaction. Blood samples for estimation of antitoxin response were taken from the animals before injection, at 48 hours, 96 hours and eleven days after the first injection. There was very little response at 96 hours, but at eleven days the level had risen from an average of 2·8 units/c.c. to 53·6 units/c.c.

One week after treatment service was recommenced with the same bull, as it was not possible to have the animals inseminated artificially. Before beginning to use him, his prepuce was irrigated with 1:1,000 solution of acriflavin.

Results

Two and a half months after treatment, the majority of the herd was pregnant. About half had held to the first service, others to subsequent services; three were possibly pregnant, and four were not pregnant. Cervical swabs were taken from the seven latter and from three cows which were pregnant but which previously were discharging badly. Since treatment, none of the animals had been seen discharging. On vaginal examination, the non-pregnant animals showed an enlarged, relaxed cervix—with very fluid secretion—very unlike the normal dioestral dry appearance. Some of the doubtful pregnancies were similar, others normal. The pregnant animals were normal. From the swabs, staphylococci grew in small numbers in two cases—both pregnant animals. The general impression from the history of the herd after treatment, the clinical examination, and the bacteriological examination, was that the condition had very largely cleared up.

It cannot be stated with certainty that the condition was due to the staphylococcal infection. It was obvious at the start that there was some generalized trouble throughout the herd. It was possible that a sterile bull might be responsible, but seemed unlikely in view of the associated symptoms of vaginal discharge and abortion. These symptoms showed some resemblance to those of trichomoniasis, and to what is usually described as *C. pyogenes* infection. The possibilities of a sterile bull and of trichomoniasis were eliminated, and on culture the only significant bacteria grown were the staphylococci. Following treatment directed against these, the clinical features of the condition largely resolved, with fertility results as good as can be expected with hand service—about 50 per cent. conceived at first service. The animals which had not become pregnant within 2½ months were those in which the genital tract was still abnormal. Possibly lesions had been caused which would not resolve, though no bacteria were grown from swabs from these animals.

Discussion

The question arises as to whether the bull was responsible for spreading the condition. This may have been so, but the fact that the ten heifers, which were not treated in any way, were normally fertile, and that the bull after very little treatment gave good results with the cows, is against the view that he was spreading the infection.

Whether infertility associated with staphylococcal infection is common cannot be said, but it was thought worth while to record this case in order to show, first, that given suitable conditions these organisms can establish themselves in the uterus and perhaps cause infertility, and secondly, that all cases of endometritis do not respond to routine iodine irrigation, and that bacteriological examination can be a valuable aid to diagnosis.

The agglutination tests for *Tr. foetus* were carried out by Dr. Muriel Robertson; all the bacteriological examinations were made by Mr. F. Blakemore. The estimations of antitoxin response to the staphylococcal toxoid were made through the kindness of Dr. R. F. Montgomerie.

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Removal of Nine-inch Knitting Needle from Oesophagus and Stomach of Cat

R. D. FRANKLIN, M.R.C.V.S.

Wolverhampton

Subject.—This was a year old ginger neuter cat.

History.—It was claimed that the cat had swallowed part of a celluloid knitting needle.

Examination.—The cat was holding its neck outstretched and was retching violently and frequently, and bringing up blood-stained froth. It was too weak to stand. About ½ inch of the needle could be felt in the oesophagus, at the entrance to the chest.

Prognosis.—This was poor, as it was assumed that the oesophagus had been perforated several times by the pointed end of the needle, during the retching.

Procedure.—1 gr. of nembutal was injected intraperitoneally and anaesthesia had to be completed with ether.

A mid-line gastrotomy was performed and a complete knitting needle was removed, knob first, and exactly 9 in. long.

The stomach was sealed with a single continuous Lembert suture of catgut, fitted with Tenax single strand needle.

The skin, muscle and peritoneum were all pulled together with four deep nylon sutures.

The cat remained deeply narcotized for two days, but on the third day it was fairly bright and took some food.

The nylon sutures were removed on the sixth day. The wound had healed by first intention and the cat was quite normal.

* * * * *

Note on Deep Nylon or Silkworm Gut Sutures in Abdominal Surgery

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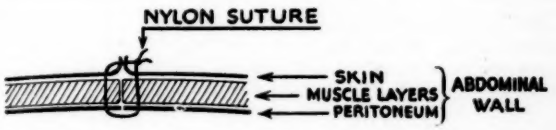
Wolverhampton

By deep suture, here, is meant one involving skin, muscle layers and peritoneum, as indicated in the diagram.



These sutures are quite successful and safe, in mid-line operations, where they involve the comparatively thin and less reactive *linea alba*.

In the cat spaying operation by the flank incision, however, there is so much muscle reaction that usually these sutures, unless left dangerously loose, tend to cut into the skin, cause marked irritation and are often difficult to remove and may sometimes even become buried.

REVIEW

[**La Pathologie des Oiseaux.** Lesbouyries, G., Professor of the Alfort Veterinary School. (1941.) Vol. II. 481-868. Vigot Frères, 23, Rue de l'École-de-Médécine.]

This volume deals in great detail with the parasitic infestations of birds, including an excellent article on the fungi found as causal agents of disease in these species. It is unfortunate that the considerable article on coccidiosis was written for publication in 1941, when work was in progress and the results soon to be published in this country of the successful treatment of this disease by means of sulphamethazine.

Poisonous substances of mineral, vegetable and animal origin are dealt with. It is noted cocoa poisoning is not discussed; cocoa waste has been the cause of much loss of poultry in this country particularly during the period 1940-45.

There is an interesting and very useful contribution on the mainly non-specific disorders of the individual organs and also on the diseases of the respiratory, digestive, reproductive, urinary, circulatory and nervous systems. The conditions affecting the organs of locomotion, the skin, feathers, beak and claws all receive due recognition.

Throughout the volume the author has quoted the names of numerous investigators, in some giving the year when the work was published. Regrettably no complete references with full titles stating where these articles may be found have been included. A list of complete references at the end of each chapter would have greatly improved the value of this publication. The volume is an excellent production, most beautifully illustrated, and the publishers deserve congratulation for their work.

Weekly Wisdom

Reading this life I seemed to see in it a corroboration of Proust's intuition, that the material of the artist lies in those fragments which keep for him a representative value, and it is only through such queer little doors that he can enter into the presence of actualities and understand them. The present is a confused dream; the future a distraction; only memory can unfold the meaning of life.—Anon.

ABSTRACTS

[Further Observations on an Infective Agent in Fowl Paralysis. BLAKEMORE, F. (1945.) *J. comp. Path.* **55**. 1-18.]

The author records the results of further investigation into fowl paralysis. When young chicks of a susceptible in-bred strain were used in the tests, the presence of an infective virus was demonstrated in 12 out of 14 natural outbreaks investigated. In chicks inoculated with material from field cases virus was mild in its effects, but by serial passage the virulence increased; in one experiment all the chicks in the third passage group died within ten days, while in another, with virus of different origin, the chicks used at the eighth passage died in six days. Infection was transmissible by contact, but in this case there elapsed an interval of 20 to 40 days between exposure and development of lesions.

Experiments supported the belief in the existence of stocks resistant to fowl paralysis. Thus, 48-hour old chicks obtained from four different sources and reported to be resistant developed normally and most showed no evidence of infection at 25 days after inoculation, whereas all control susceptible chicks receiving the same dose of virus died within 12 days.

The demonstration of resistance to virus developing with advancing age was an interesting feature of the experiments. When susceptible-strain birds aged eight to 20 weeks were inoculated with virulent virus the majority, in time, developed neural and gross visceral lesions and became paralysed; on the other hand, in birds inoculated when 18 months to two years old the nerves did not become involved and the organs also remained normal or showed only healed lesions. In the younger age the disease is regarded as being chronic in type and the gross lesions which develop result from prolonged reactive change on the part of the tissues which possess at this time only a partial immunity.

In studies in the pathology of fowl paralysis the author found areas of necrosis in the liver of young chicks which had died a few days after inoculation; these areas on microscopic examination were found to be related to small blood vessels which themselves showed pathological change, but there was no cellular reaction in the surrounding tissues. In cases of longer duration (ten to 40 days after infection) oedema occurred in different organs and parts of the body. Throughout the substance of the liver there were ill-defined greyish white areas. The heart, which was increased in size, showed either a sero-fibrinous pericarditis with adhesions or localized or diffuse infiltration limited to the myocardium. Infiltrations could persist for many weeks, but as the disease became chronic they tended to localize and become lymphomatous to form what often appeared to be neoplasms. Histologically the lesions in cases of ten to 40 days' duration were of a proliferative character with cellular infiltration. There was parenchymal necrosis and blood vessels showed irregular growth of the endothelium or unrestricted outgrowths of fibrillary tissue. The latter often surrounded groups of normal cells, thus suggesting a neoplastic tendency. The cellular infiltration which, in many cases, was almost entirely lymphocytic, was considered to arise principally from the haemopoietic foci which are related to the blood vessels.

While there has been a tendency, especially in America, to classify neurolymphomatosis as a form of leukaemia, Blakemore considers that his strain of virus, even after regular passage for five years, has shown no ability to produce disease of true leukaemic type.

The infective agent possessed the characters of a virus. It passed through Berkefeld V filters and gradocol membranes of 0·6 A.P.D., but not through Berkefeld N filters, thus indicating comparative largeness in size. In suspension kept in the refrigerator the virus did not remain viable for more than seven days; the best method of maintaining virus was by inoculation of two to three-month old fowls, from the tissues of which it could readily be recovered several months later. Like most viruses it was not resistant to heat. It appears that an attack of the disease does not result in the appearance of circulating antibodies.

D. R. W.

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[Immunization Against Rinderpest by a Scarification Method. SIDDIQI, T. A. (1944.) *Ind. J. vet. Sci.* **14**. 159-163.]

A comparison is made between the routine subcutaneous method of immunization against rinderpest and the scarification method is described, but not a direct comparison of the effect produced by the introduction of antigen by different routes, the dose of vaccine given subcutaneously not being mentioned. The described method of vaccination consisted of scarification of the hairless skin of the concave surface of the ear of the ox and application of goat virus in the form of a 50 per cent. aqueous suspension of goat spleen pulp. Twenty dairy calves and four hill bulls were vaccinated by this method and five dairy calves were vaccinated by the subcutaneous route. Following vaccination, 17 of the 20 calves showed no reaction, three showed a mild thermal reaction. One of the hill bulls reacted and recovered, the other three died, one of rinderpest and two showing no characteristic lesions. The five calves inoculated subcutaneously showed a mild thermal reaction.

The surviving cattle were divided into four groups, one group being tested for immunity every three months. Fifteen out of 19 of the animals vaccinated by scarification and four out of five of the animals vaccinated subcutaneously showed no reaction following subcutaneous inoculation of 5 c.c. of virulent hill bull blood and exposure to reacting controls.

The simplicity of the method, the smaller amount of equipment and the fewer assistants required are considered to be the chief advantages of the scarification route over the subcutaneous route. Further experiments on an extensive scale are said to be in progress.

W. M. H.

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[The Effect of Low Outdoor Temperatures on the Free-living Stages of Some Common Nematode Parasites of Sheep. DINABURG, A. G. (1945.) *Amer. J. vet. Res.* **6**. 257.]

Earlier work by various investigators, quoted by the author, has shown that the preparasitic stages of *Ostertagia* spp., *Nematodirus* spp. and *Trichuris ovis* survived over the winter in fairly high proportions on pastures in Eastern Canada and at Beltsville, Maryland, U.S.A. This work also showed that the preparasitic stages of *Haemonchus contortus* and *Trichostrongylus* spp. survived in smaller proportions, while those of *Oesophagostomum columbianum, Cooperia curicei* and *Bunostomum trigonocephalum* did not survive the winter at all. Baker, D. W. (1939, *Cornell Vet.*, **29**, 45), on the other hand, found that the larvae of all these nematodes did survive for at least one year on a pasture in New York. The animals used in the experiments just mentioned were usually removed from the pastures in the autumn, so that the pastures were not occupied during the winter; the survival of preparasitic stages was determined by the degree of infestation of parasite-free sheep put on to the pastures the following spring. These results have considerable practical value because they directly show the danger to the animals; but they do not tell us the fate of eggs deposited when sheep are on the pastures during the winter.

In this paper the author records his study of the effects of exposure, out of doors during the colder months, of the eggs and larvae of *Cooperia curticei, Trichostrongylus* spp., *Ostertagia circumcincta* and *Oesophagostomum columbianum*. His earlier work (Dinaburg, A. G., 1944, *J. Agri, Res.*, **69**, 421) showed that outdoor temperatures and not moisture conditions were the limiting factor in the survival of larvae of *Haemonchus contortus* at mean maximum temperatures below 65° F. He therefore now studied the effects on the preparasitic stages of the species just named of exposure for 14 days in jar cultures to low temperatures.

The experiments were done from December, 1941, till April, 1942, and from October, 1942, till April, 1943. In six out of ten experiments the pre-infective stages of *Oesophagostomum columbianum* were killed by mean maximum temperatures of 62° to 32° F. and mean minima of 40° to 14° F. In two experiments they were killed during the collection of the faeces for 24 hours at temperatures of 63° to 32° F. and 38° to 22° F. The pre-infective stages of *Cooperia curticei* were killed in all six experiments done at mean maximum temperatures of 49° to 33° F. and minima of 30° to 16° F. Those of *Trichostrongylus* spp. were killed in four out of six experiments at maxima of 42° to 32° F. and minima of 38° to 14° F.; in another experiment they were killed at temperatures of 46° to 90° F.; in another they survived the exposure for 14 days and then a few infective larvae developed from them: in yet another they were killed during the collection of faeces at temperatures of 12° to *minus* 3° F. The pre-infective stages of *Ostertagia circumcincta* were killed in one experiment by a maximum temperature of 31° F. and a minimum of 14° F.; in two other experiments they were killed during collection of the faeces at temperatures of 36° to 16° F. and 20° to *minus* 3° F.

The author concludes that the larvae of all the species studied except *Ostertagia*, would, if they are exposed to climatic conditions similar to those of Beltsville, Maryland, probably be killed during December, January and February. Those of *Ostertagia* would probably be killed only by sustained temperatures below freezing; further, the eggs of *Ostertagia* would survive and begin to develop at a lower temperature than those of the other three species used. The author is separately studying the survival of infective larvae over the winter; this constitutes an additional source of danger to sheep.

Dicumarol, the active principle of spoiled sweet clover hay, has been found to possess germicidal as well as anticoagulant properties. —*J. Amer. vet. med. Ass.*

QUESTIONS IN PARLIAMENT

Animal Diseases (Penicillin)

Mr. Henderson Stewart asked the Minister of Agriculture what steps are being taken to make penicillin available to veterinary surgeons, in view of the wide demand and urgent need of its application for animal diseases.

Mr. T. Williams: Large scale field trials in the use of penicillin in the treatment of animal diseases are now being undertaken, and adequate quantities of penicillin have been made available for this purpose by my right hon. Friend the Minister of Supply. I am advised, however, that the question of the unrestricted issue of penicillin to veterinary surgeons must be deferred until it is known that the increased supplies leave a sufficient margin after meeting all human needs.

Mr. Stewart: Is it not common knowledge, to judge from statements made in the Press, that there is now no end of penicillin going round? If that be so, why are veterinary surgeons not allowed to have some?

Mr. Williams: If there are ample supplies there will be ample for livestock too.

Lieut.-Commander Joynson-Hicks: When these supplies go to veterinary surgeons will it also be possible for unqualified practitioners to obtain supplies?

Mr. Williams: I am afraid I should need a lot more notice of that question.

Veterinary Practice (Unregistered Persons)

Mr. Prescott asked the Minister of Agriculture whether he is now in a position to make a statement concerning the Report of the Chancellor Committee on Veterinary Practice by Unregistered Persons.

Mr. Tom Williams: I would refer the hon. Member to the reply given to the right hon. Member for Southport (Mr. R. S. Hudson) on April 1st last.

[In this statement (given in full on page 161 of our issue of April 6th) the Minister announced the Government's acceptance, in principle, of the recommendations made by both the Loveday and the Chancellor Committees, and its intention of introducing legislation "as soon as practicable."]

Advisory Service (Appointments)

Mr. Hollis asked the Minister of Agriculture what written and practical examinations it is proposed to institute to ascertain the qualifications of persons to be appointed to the projected agricultural advisory service.

Mr. T. Williams: Appointments will be made after interview by selection boards appointed by the Civil Service Commission, and there will be no written or practical examinations.

Mr. Hollis asked the Minister of Agriculture how many appointments, when, and at what cost, it is proposed to make to the projected agricultural advisory service.

Mr. T. Williams: My intention is that appointments shall, in general, be effective from October 1st next. Candidates are at present being interviewed by selection boards whose work cannot be completed for several weeks. Consequently it is not yet possible to state the number and financial cost of the appointments which will be made by October 1st.

Animal Feeding-stuffs

Mr. Hurd asked the Minister of Agriculture if he has any statement to make about the position of pig and poultry keepers; and if the Government will compensate those who are driven out of business by the further cut in feeding-stuff rations.

Mr. T. Williams: Some immediate changes in the arrangements for feeding-stuff rations in Great Britain during the summer period have been made necessary by the reduction in the supply of animal feeding-stuffs which will result from the flour conservation measures announced by my right hon. Friend the Minister of Food on May 2nd. Basic rations for farm pigs and poultry will have to be reduced in July, August and September, to quantities sufficient for one-twelfth of pre-war numbers. Other classes of stock will also be affected.

I am asking farmers, in making their plans for livestock production, not to proceed on the assumption that the increased rate of extraction and the consequent reduction in the output of millers' offals will be maintained indefinitely. I hope they will make every effort to maintain livestock production in this difficult period, both by increasing their own self-sufficiency in feeding-stuffs to the maximum extent through such measures as silage-making, and also by making the greatest possible use of unrationed feeding-stuffs.

These reductions have been dictated by the world shortage of cereals and not by any change in Government policy. I could not accept the view that a case for specific compensation exists or that any pig or poultry keepers will be driven out of business.

NOTES AND NEWS

Diary of Events

May 18th.—Annual and Scientific Meetings of the Nutrition Society (English Group) at the London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1, 11 a.m.
May 21st.—R.C.V.S. Council Elections—Voting Papers issued.
May 23rd.—Annual Meeting of the Dumfries and Galloway Division, N.V.M.A., at Carlisle, 2 p.m.
May 24th.—Special Meeting of the North Wales Division, N.V.M.A., at Bangor (School of Agriculture), 2 p.m.
May 25th.—Annual and Scientific Meetings of the Nutrition Society (Scottish Group), in the East Medical Theatre, the Royal Infirmary, Edinburgh, 11 a.m.
May 28th.—R.C.V.S. Council Elections—Voting Papers to be returned.
May 29th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, at 1, Wimpole Street, W.1, 2.30 p.m.
May 31st.—Annual General Meeting of the National Veterinary Benevolent and Mutual Defence Society, at Manchester (Grand Hotel), Aytoun Street, 3.30 p.m.
June 1st.—Meeting of the Society of Women Veterinary Surgeons, at the Conway Hall, Red Lion Square, London, W.C.1, 2.30 p.m.
June 4th.—R.C.V.S. Annual General Meeting.
June 4th.—R.C.V.S. Committee Meetings.
June 4th.—Annual General Meeting, Victoria Veterinary Benevolent Fund, 10, Red Lion Square.
June 5th.—R.C.V.S. Committee Meetings.
June 6th.—R.C.V.S. Committee and Council Meetings.
June 6th.—Visit of the Central Veterinary Society to Northaw and the White City (see Notice).
June 13th.—Summer Meeting of the South-Eastern Division, N.V.M.A., at the Wellcome Research Station, Ely Grange, Frant, Nr. Tunbridge Wells, 11 a.m.

The Following is the Provisional Programme for N.V.M.A. Council and Committee Meetings in June in Edinburgh

Wednesday, June 19th
11 a.m.—Finance and General Purposes Committee.
2.30 p.m.—Sub-committee on First Aid Handbook.

Thursday, June 20th
10 a.m.—Appointments Committee.
11.30 a.m.—Organising Committee.
2.15 p.m.—Joint Veterinary Officers, Public Health and Parliamentary Committee.

Friday, June 21st
11 a.m.—Council Meeting.

Would members wishing accommodation reserved in Edinburgh hotels notify the General Secretary, N.V.M.A., 36, Gordon Square, W.C.1, *without delay*, giving dates.

June 27th.—R.C.V.S. Written Examinations begin.
July 1st.—R.C.V.S. Oral and Practical Examinations commence.
Sept. 23rd-27th inclusive.—Annual Meeting and Conference of the National Veterinary Medical Association of Great Britain and Ireland, to be held in London.

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PERSONAL

Mrs. J. W. McIntosh and Mrs. Nickinson would like to thank all their friends for kind expressions of sympathy in their recent sad loss and for the many letters received during Mr. McIntosh's illness.

Marriage.—McGowan—Martin.—The wedding took place at Moulin Kirk, Pitlochry, on April 18th, 1946, of Dan McGowan, M.R.C.V.S., son of the late Mr. John C. McGowan and Mrs. McGowan, of Toberbilly, Ballycastle, Co. Antrim, and Hetta, daughter of Mr. Wm. Martin, M.A., and Mrs. Martin, of Benview, Moulin, Pitlochry.

Births.—Bunker.—On May 4th, 1946, at Trebarras Nursing Home, Liskeard, to Margaret Mary (*née* Pedlar), wife of Major J. A. Bunker, R.A.V.C., a daughter.

Edwards.—On May 6th, 1946, to Nesta, wife of Clifford M. Edwards, B.V.Sc., M.R.C.V.S., University College of North Wales, Bangor, a son.

Gray.—On May 10th, 1946, at Fernbrae Nursing Home, Dundee, to May (*née* Kebel Smith), wife of William S. Gray, M.R.C.V.S., Poplar Hall, Witham, Essex, a son, Iain.

The Late Mr. John Brown, F.R.C.V.S., of Invergordon

AN APPRECIATION

Mr. J. B. RUSSELL, M.R.C.V.S., of Elgin, writes:—

As one of the many who had the privilege of pupilage and assistantship with the late John Brown, F.R.C.V.S., I wish to pay a tribute, however inadequate, to a great man and a brilliant veterinary practitioner.

To all young men in the profession John Brown was a real source of inspiration and incentive. To him, indeed, the veterinary profession was not only a career but a calling demanding almost a religious devotion. For over 50 years he practised in the famous farming district of Easter Ross in the county of Ross-shire, having his headquarters and home at Invergordon. After settling down there he rapidly became widely known as an outstanding practitioner and soon his reputation was a household word right up to the most northerly parts of Sutherlandshire and Caithness.

Physically endowed with more than his share of strength and stamina, there seemed to be no tiring of his energetic and forceful nature. A great reader, he was always thoroughly up to date; in fact, he was a pioneer in many matters pertaining to veterinary science.

In John Brown we most certainly had a member who worked hard and spared no effort to raise the prestige and dignity of the profession amongst all classes of the community. Generous almost to a fault, the most genial of hosts, a great raconteur—no one could fail to enjoy and profit from his company.

And so without mourning but with a deep appreciation of a life devoted to the highest ideals of the profession, we say good-bye to one of the leading practitioners of our day.

The deepest sympathy of their many friends in the profession is extended to Mrs. Brown in her grievous loss.

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Entero-Toxaemia in Goats

The Wellcome Physiological Research Laboratories, Beckenham, have informed the Association that they have been approached by the British Goat Society with a view to conducting an investigation to determine the cause of sudden deaths in goats.

The laboratories have informed us of the arrangements which they wish to make and the officers of the Association have given their general approval to the scheme. It is intended that a note be published in the British Goat Society's monthly journal intimating that the laboratories have agreed to co-operate in this investigation and suggesting that any member of the Society who is prepared to help approach his local veterinary practitioner in the matter. The practitioner would be asked to make *post-mortem* examinations as soon as convenient after death and remove from the carcase the specimens which the laboratories wished for their investigation. It is suggested that any veterinary surgeon who is approached in this matter and who is prepared to co-operate should have from the goat-owner a short history of the herd and transmit this to the laboratories, who will then communicate with him regarding the type of specimen they wish to have and will send suitable containers.

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HEAT TREATMENT OF MILK

The N.F.U. has received a report from the Ministry of Health outlining their views regarding statements as to the relative merits of T.T. and pasteurized milk.

The Ministry state that while it is recognized that T.T. milk affords a higher degree of safety than other raw milk, and in particular that the risk of tuberculosis from it is remote, they could not regard it as providing the same degree of safety against other milk-borne diseases as is given by properly pasteurized or other adequately heat-treated milk.

The Union was disturbed at statements in the Press which suggested alteration in the White Paper policy, and extension of heat treatment to designated milk. The Ministry of Agriculture is arranging a meeting with representatives of the Union and the Milk Marketing Board, to discuss further any contemplated changes in the White Paper policy.

The Union repeats that it is strongly opposed to any departure from the White Paper policy of 1943, and particularly to any suggestion of the removal of the accredited milk exemption to which reference had been made in the Press reports.

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Farmers in Kenya are gratified by a recent announcement that a subsidy is to be granted to importers of pedigree stock into the Colony. The subsidy will probably be to the value of a quarter of the total cost landed in Kenya, with the proviso that the animal must remain for three years in the ownership of the importer subsidized.—*Colonial Office Press Section.*

ROYAL SANITARY INSTITUTE'S HEALTH CONGRESS

The final arrangements have now been made for the Health Congress which is to be held at Blackpool from June 3rd to 7th next by the Royal Sanitary Institute.

The Right Hon. Lord Woolton will be installed as President of the Congress at the inaugural meeting on the opening day. On the four other days 38 addresses and papers will be presented.

On Tuesday, June 4th, the President of the Section of Preventive Medicine, Sir Wilson Jameson, Chief Medical Officer, Ministry of Health, will give an address.

Following is the programme of the Section (D) of Veterinary Hygiene, which will meet on Friday, June 7th, in the Spanish Hall, Winter Gardens:—

10 a.m. to 1 p.m.—1. Address by the President, Professor J. G. Wright, M.V.SC., F.R.C.V.S., Professor of Surgery, University of Liverpool Veterinary School.

2. "Pathology in its relation to Meat Inspection," by H. Thornton, B.V.SC., M.R.C.V.S., D.V.H., Chief Veterinary Officer, Newcastle-on-Tyne.

3. "The Tuberculin Test and the Control of Bovine Tuberculosis," by J. Francis, B.SC., M.R.C.V.S., of Imperial Chemical (Pharmaceuticals), Ltd., Biological Laboratories.

The following resolution will be proposed from the chair:—

"That this section is of the opinion that the Government, in its post-war plans for increasing the efficiency of agriculture and so improving public health, should give high priority to the eradication of bovine tuberculosis. It is known that this disease is amenable to the methods applied so successfully during the last 50 years, first by the Veterinary Department of the Privy Council and later the Diseases of Animals Division of the Ministry of Agriculture, to eradicate many of the zymotic diseases of cattle.

"A campaign to eradicate bovine tuberculosis on an area basis will require great and continued effort. Consequent on the alleged shortage of veterinary surgeons and the evidence from overseas that the single intradermal tuberculin test gives satisfactory results in large scale eradication schemes, this section recommends the Council of the Royal Sanitary Institute to urge that the Animal Health Division of the Ministry of Agriculture gives urgent attention to the early replacement of the *double*, by the *single*, intradermal tuberculin test."

In addition to the discussions, many visits will be paid to places of public health interest in and around Blackpool, and the delegates will also inspect various undertakings at Lancaster, Fleetwood, Preston and Lytham St. Annes.

A record number of delegates has been appointed to attend the Health Congress, and it is expected that about 2,000 people will be present.

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DOCTORS' INCOMES IN A PUBLICLY ORGANIZED SERVICE

At the end of last week the report was issued of the Inter-Departmental Committee on Remuneration of General Practitioners (Cmd. 6810, 6d. net). Mr. Bevan, the Minister of Health, stated in the House of Commons that he would have discussions with the doctors before reaching any decision on the report.

The Committee (appointed in 1945) was instructed to consider "what ought to be the range of total professional income of a registered medical practitioner in any publicly organized service of general medical practice; to consider this with due regard to what have been the normal financial expectations of general medical practice in the past, and to the desirability of maintaining in the future the proper social and economic status of general medical practice and its power to attract a suitable type of recruit to the profession."

The main recommendation contained in the report, in respect of a publicly organized service, is that a scheme should be devised to secure, as far as practicable, that between 40 and 50 years of age approximately three-quarters of the practitioners should receive incomes of over £1,000, one-half of the total to receive £1,300 or over; approximately one-quarter to receive over £1,600; that slightly less than one-tenth receive incomes over £2,000, and a small proportion of at least £2,500. All incomes are given as net, by which is meant gross income less such professional expenses as are allowed by the Inland Revenue for income tax purposes. "Here also, as in the body of the report, we are expressing our recommendations in terms of the 1939 value of money."

In putting forward the argument for an increase of expenditure on general practice, "less on any particular consideration than on the importance of such practice in a publicly organized health service," the report states that "general practice is the foundation on which all else is built. If its recruitment is not maintained—alike in quantity and quality—both as against other professions and as against other branches of the medical profession, no other

health service, specialist or hospital service, however excellent, can make good the loss or even play successfully the part it should play."

On the assumption that the number of persons covered by a publicly organized service is 45,000,000, "we are of opinion that our proposals could be realized at a cost of 15s. 6d. a head." The estimate represents a "very considerable increase both on capitation payments under the existing National Health Insurance Scheme and on the total net income of practitioners in the three years ended in 1939." The increase was regarded as justified.

A rider to the report contributed by Sir Ernest Fass, formerly the Public Trustee, proposes a somewhat lower range of remuneration than that suggested in the main report on the ground that doctors' earnings must be kept in proportion with those of comparable professions.

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THE VETERINARY EDUCATIONAL TRUST

Sir Percy Loraine, one of the Jockey Club's representatives on the Racecourse Betting Control Board, has accepted an invitation to join the Bloodstock Industry Committee of the Veterinary Educational Trust.

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N.F.U. PRESIDENT ON EFFECTS OF CUTS IN FEEDING-STUFFS

Discussing the effects of the recently announced feeding-stuffs cuts with a representative of *The Farmers' Weekly*, Mr. James Turner, President of the National Farmers' Union, said that they would result in a limiting factor even more stringent than was felt at the height of the U-boat campaign. They could hardly blame or excuse the Government. It was unfortunate that with this further cut the burden would fall unequally on one section of food producers.

"The Government's appeal to increase our self-sufficiency," said Mr. Turner, "offers little scope to the stock feeder who is already covered by the Compulsory Sales Order on wheat and barley and whose acreage of oats and dredge corn has been cut to the minimum in the effort to produce more grain for human consumption this year. And unless farmers can be sure that they will be able to maintain their flocks and herds, it will certainly have a bad effect on fertility.

"The feeling of uncertainty created by the world food situation will only be removed if the results of the harvest are sufficient to alleviate the position. This illustrates (and townsmen might make a note of it) the hazards of the farming industry. Only when there is plenty are the hazards felt by the farmer and by no one else."

Mr. Turner added that the forthcoming world conference in London would provide an opportunity for agriculturists of all nations to discuss ways of meeting the emergency.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Foot-and-Mouth Disease:

Southants.—Verona, Butts Road, Hedge End, Southampton (May 10th).

Swine Fever:

Buckinghamshire.—Birkin Manor, Horton, Slough, Bucks (May 7th).

Essex.—Anchor Inn, Canewdon, Rochford, Essex (May 7th).

Middlesex.—Pegasus Farm, Nelson Road, Whitton, Hounslow, Middlesex (May 8th).

Northamptonshire.—Northampton Corporation, Sewerage Farm, Great Billing, Northampton (May 7th).

Surrey.—Kimberley House, Bookham, Leatherhead, Surrey (May 8th).

Warwicks.—19, Hunts Road, Stirchley, Birmingham, 30 (May 11th).

Yorks. (W.R.).—91, Langsett Road South, Oughtibridge, Sheffield May 11th).

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AGRICULTURE'S PART IN THE REHABILITATION OF THE NATIONAL FINANCES

In his recent address on the above subject, at the meeting of the Farmers' Club on May 6th, Mr. W. J. Cumber, C.B.E., said that agriculture was the only industry which could produce real wealth without depleting the sources from which it was produced or depending to any great extent on imports. In addition to exporting more in order to be able to import more, they should also aim at producing more food in order to leave dollars free to import such foods as they were unable to grow here and also to import the raw materials necessary for industry.

Britain's finances were now in the state where it was necessary to borrow considerable sums of money from the United States. One wondered sometimes whether the Government fully appreciated the potential in the agricultural industry.

"In spite of all the efforts of farmers and War Executive Committees to bring derelict and waste land into production, there are still vast tracts of land all over the country which are not producing a fraction of what they could. Much of this land is hill and moorland, which has, in the past, been considered to be doing its best by grazing about one sheep on two to five acres, and very often no cattle at all.

"Some of this land may not be suitable for cereal production, but this could be reseeded to enable our livestock programme to be carried on in step with the cereal production now so urgently needed. This is important. Much of the straw grown in the last few years has been burnt on the fields. This policy is disastrous. The only way to keep up the fertility of our soil is to keep more stock, and so enable us to return muck to our fields and not ashes."

Before our acres could be utilized on any large scale this land must be developed. Roads must be made, farm buildings, cottages and villages built, water and electricity supplied, and a great deal of drainage work done. Much capital would be involved, but this would be an investment, because the increased value of the land and its productivity would yield tremendous sums in interest.

It was not suggested that all this expense should be borne by the landowners, although under the Government plan of allowing improvements to be written off in ten years a proportion of it might be. Even allowing for this there would still be a great deal of capital to be found. The Government seemed quite prepared to pour million after million into schemes for increasing our export trade. Why not spend some on home production as well, if it decreased the number of dollars to be sent abroad?

The scheme he had outlined would benefit the whole community by producing national wealth, and also by producing more food at home and leaving those precious dollars to be spent on essential raw materials. By this scheme, agriculture, with no imports other than potash and part of the phosphate required, could make an invaluable contribution to our financial recovery.

* * * * *

ACCREDITED POULTRY BREEDERS

Sir John Barlow, Bt., M.P., was elected President of the Accredited Poultry Breeders' Federation at the annual general meeting in London on May 3rd. He succeeds Sir Joseph Lamb, who, owing to ill health, did not offer himself for re-election. With an increase of 234 during the year, the membership of the Federation had reached 1,523 by the end of 1945. The total of accredited and probationer breeders is 2,456 and (says *The Farmer and Stock-Breeder*) 100 per cent. membership is the aim.

"The morning's news about the increased rate of flour extraction cast a certain amount of gloom over the proceedings, but all present were determined to face whatever was to be and fight through to better times.

"Speaking on the future of the industry, Dr. R. Coles, of the Ministry of Agriculture, said that before the war poultry-keeping had been the third most important branch of agriculture. He saw no reason why that position should not be improved upon when things became more normal. There was nothing to prevent their becoming the leading specialist branch.

"Dr. Coles warned the Federation that the recent rapid growth of accreditation was a source of responsibility as well as pleasure. At the moment a voluntary scheme was the only possibility and it had the advantage that if it worked it would give more zip than any compulsion.

"He reminded the meeting that the Ministry's poultry advisory officers were not there to police the scheme. Their job was to advise breeders how to get the best results from their stock. This left a heavy responsibility on the breeders themselves."

* * * * *

THE ZOOLOGICAL SOCIETY

Service men, returning from abroad, have brought pets, ranging from monkeys to crocodiles and poisonous snakes, to the London Zoological Society, whose annual report states that by the end of 1945 there were 1,849 animals in the London Zoo, and 824 at Whipsnade. There is a surplus of assets over liabilities of £508,517. A large increase over pre-war visiting figures at Regent's Park is shown by a total of 2,208,134 visitors in 1945, compared with 1,707,443 in 1939. Last year's figures were the second largest ever recorded.

Reconditioning of essential Zoo services and the erection of new buildings is estimated at £400,000 for the London Zoo alone.

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office.

COMMAND PAPERS (Session 1945-46):

(6810.) General Practitioners, Remuneration of. Report of the Inter-Departmental Committee (Chairman: Sir Will Spens). April 26th, 1946 — 0 6 — 0 7

AGRICULTURE AND FISHERIES, MINISTRY OF:

Leaflet, Advisory, No. 64. An Economical Sheep-Dipping Bath ... ... each — 0 1 — 0 2
doz. — 0 9 — 0 11

* * * * *

SCHEME FOR THE CONTROL OF DISEASES OF DAIRY CATTLE

STATEMENT SHOWING THE NUMBER OF UNDERTAKINGS NOTIFIED TO THE MINISTRY OF AGRICULTURE DURING THE MONTH ENDED APRIL 30TH, 1946

County	Undertakings Notified: During Month	Undertakings Notified: Previously	Total Undertakings: Number	Number of Cattle: Cows	Number of Cattle: Heifers
ENGLAND					
Bedford	—	34	34	773	431
Berks	—	89	89	3,207	2,094
Bucks	—	79	79	2,717	1,457
Cambridge	—	10	10	190	79
Chester	—	338	338	11,145	4,410
Cornwall	—	4	4	72	75
Cumberland	—	57	57	1,454	1,226
Derby	2	323	325	9,189	5,233
Devon	5	311	316	4,639	2,706
Dorset	—	66	66	2,078	1,124
Durham	1	254	255	5,434	2,276
Essex	—	221	221	7,401	4,388
Gloucester	—	92	92	2,459	1,741
Hampshire	6	374	380	10,929	7,342
Hereford	—	17	17	354	204
Hertford	—	80	80	2,362	1,554
Hunts	—	7	7	280	168
Isle of Ely	—	1	1	57	21
Isle of Wight	—	9	9	171	94
Kent	—	159	159	3,725	2,255
Lancs	1	167	168	4,929	1,852
Leics	—	100	100	2,511	1,904
Lincs (Holland)	—	3	3	25	11
Lincs (Kesteven)	1	22	23	321	192
Lincs (Lindsey)	1	103	104	2,027	1,214
Middlesex	—	13	13	419	219
Norfolk	—	132	132	4,274	3,010
Northants	—	72	72	2,129	1,812
Northumberland	—	61	61	1,907	1,270
Notts	1	183	184	4,048	2,435
Oxford	—	42	42	1,174	1,866
Rutland	—	8	8	156	107
Salop	2	224	226	6,561	3,510
Soke of Peterborough	—	—	—	—	—
Somerset	2	251	253	6,696	3,128
Staffs	—	186	186	5,395	3,537
Suffolk, E.	1	55	56	1,233	857
Suffolk, W.	—	48	48	1,008	707
Surrey	1	100	101	2,862	1,380
Sussex, E.	1	168	169	4,253	2,641
Sussex, W.	3	112	115	3,325	1,929
Warwick	—	122	122	2,764	1,951
Westmorland	—	7	7	187	181
Wilts	—	84	84	3,388	1,585
Worcester	—	154	154	3,008	1,581
Yorks, E.R.	—	98	98	1,532	946
Yorks, N.R.	1	109	110	3,378	216
Yorks, W.R.	1	234	235	5,661	2,287
WALES					
Anglesey	—	49	49	843	600
Brecon	—	12	12	204	129
Caernarvon	—	110	110	1,764	967
Cardigan	—	37	37	692	455
Carmarthen	3	272	275	5,095	2,692
Denbigh	—	32	32	738	335
Flint	—	83	83	1,864	878
Glamorgan	—	97	97	1,562	686
Merioneth	—	10	10	137	65
Monmouth	—	53	53	1,241	688
Montgomery	—	14	14	285	246
Pembroke	—	61	61	1,226	884
Radnor	—	—	—	—	—
TOTALS	33	6,213	6,246	159,548	89,831

Notes.—(1) Operative periods of undertakings: 1 year, 1,630; 2 years, 424; 3 years, 4,192. (2) Undertakings renewed for further periods: 1 year, 1,887; 2 years, 223; 3 years, 744. (3) Undertakings not renewed at end of operative periods, 1,622. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings and do not include undertakings renewed for further periods. Undertakings which have been cancelled or not renewed are not included in the figures for previous notifications.

County	Undertakings Notified: During Month	Undertakings Notified: Previously	Total Undertakings: Number	Number of Cattle: Cows	Number of Cattle: Heifers
SCOTLAND					
Aberdeen	—	20	20	986	448
Angus	—	17	17	654	428
Argyll	—	2	2	33	74
Ayr	—	16	16	515	306
Banff	—	1	1	120	20
Berwick	—	1	1	20	—
Bute	—	—	—	—	—
Caithness	—	—	—	—	—
Clackmannan	—	5	5	191	114
Dumfries	—	9	9	479	468
Dunbarton	—	1	1	60	40
East Lothian	—	—	—	—	—
Fife	—	27	27	973	507
Inverness	—	2	2	106	46
Kincardine	—	1	1	16	15
Kinross	—	3	3	62	43
Kirkcudbright	—	8	8	541	317
Lanark	—	4	4	154	124
Midlothian	—	—	—	—	—
Moray	—	—	—	—	—
Nairn	—	—	—	—	—
Orkney	—	—	—	—	—
Peebles	—	—	—	—	—
Perth	—	10	10	305	230
Renfrew	—	4	4	151	101
Ross-shire	—	—	—	—	—
Roxburgh	—	—	—	—	—
Selkirk	—	—	—	—	—
Stirling	—	10	10	313	284
Sutherland	—	5	5	92	44
West Lothian	—	—	—	—	—
Wigtown	—	8	8	393	177
Zetland	—	—	—	—	—
TOTALS	—	154	154	6,164	3,786

Notes.—(1) Duration of undertakings: 1 year, 43; 2 years, 8; 3 years, 103. (2) Undertakings renewed for a further period (included in column 2 of statement): 1 year, 77; 2 years, 7; 3 years, 49. (3) Undertakings expired and not renewed (no: included in column 2 of statement): 236. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings.

* * * * *

PENAL PROCEDURE OF THE GENERAL MEDICAL COUNCIL

The judgment delivered by Mr. Justice Charles in the slander action recently brought by Dr. A. H. Hennessy against Miss Irene Boyanton may have resounding consequences (states *The Lancet*), inasmuch as it stated that the removal of the plaintiff's name from the Medical Register had been a "gross miscarriage of justice." Dr. Hennessy, taking advantage (as has often happened) of the law of defamation in order to raise an issue vital to him, and alleging deliberate perjury on the part of his accuser before the General Medical Council, in effect secured the benefit of an appeal to a court of law against the decision to erase his name.

Commenting editorially on the case, *The Lancet* observes that it illustrates the disadvantages inherent in the present penal procedure of the General Medical Council. "These disadvantages have long been evident to those chiefly concerned, and as the House of Commons was told, the council themselves are at present considering proposals for the reform of the Medical Acts of which they are the instrument. The three Medical Defence Societies, through their joint co-ordinating committee, and perhaps other professional bodies, will shortly be making recommendations on this subject to the council, and no doubt these will cover such matters as the power of the council to subpoena witnesses and hear evidence on oath, the opportunity of respondents to appeal to the courts, and the possible constitution of a disciplinary tribunal distinct from the committee of the council which undertakes the preliminary investigation of penal cases. The grave nature of the penalty which the council can inflict makes it necessary that they should have full facilities for ascertaining facts; and though their functions are professional their methods must command public approval."

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A WEATHER PROPHECY

"On Sunday of last week," writes a correspondent to the issue of *The Sunday Times* of March 31st, "I found a neighbour of mine, undeterred either by persistent sleet flurries or by a thermometer most reluctant to leave the '30's' making a sowing of early peas.

"'I want,' said he, 'to take advantage of the mild spell that's coming in a couple of days. An outbreak of foot-and-mouth disease has been reported in the region: and such an outbreak, after a long spell of immunity, always foretells a marked and lasting change of temperature—from cold to mild, or vice versa—within four days.'

"By Tuesday the temperature was in the high '50's,' and there it is still. Has any reader of *The Sunday Times* ever heard of, and checked, this peculiar method of weather forecasting?"

WHAT IS A DRUG?

"A recent announcement by the Jockey Club has set racing men talking, so I gather from the sporting columns of the *Sunday Express*," writes "Onlooker" in *The Pharmaceutical Journal*. "Apparently the definition of a 'drug' is vague in the Rules of Racing. It covers anything 'administered for the purpose of affecting the speed of a horse.' Several years before the war one trainer made no secret of feeding gland extract to his horses over a period of weeks. At least one of them showed improved form. Other trainers, I learn, dose their charges with a mixture of which strychnine is a component. What, asks the *Sunday Express*, is the difference between a 'tonic' and a 'drug'? I doubt whether the average pharmacist could define a drug to the satisfaction of the man-in-the-street, who, perhaps not unnaturally, equates 'drug' with 'dope.' I seem to remember that a certain proprietary manufacturer used to proclaim to the world that his nostrum was 'not a drug.' Actually, I believe, it consisted of a whole drug *pur et simple* of the B.P."

* * * * *

The Veterinary Education Trust was a voluntary one maintained by voluntary subscriptions. The Milk Marketing Board made a capital donation of £10,000, and the National Farmers' Union contributed £200 a year. But the contributions which had come from agricultural communities were not in any way comparable with the scope of the Trust, which ranged from pedigree cattle to racing dogs. It was giving a very useful service indeed.—Mr. W. Ball, addressing the Milk Committee of the Gloucestershire F.U.

* * * * *

Grass sickness has made its appearance in Morayshire. Among the casualties is a Percheron stallion belonging to Sir Robert M'Vittie Grant, Logie, Dunphail. A seven-year-old mare and a three-year-old filly at Corskie, Garmouth, have also died of the disease.

* * * * *

Meeting at Haverfordwest, Pembrokeshire Livestock Committee passed a resolution viewing with alarm the increase in cattle sterility throughout the county and asking the Ministry to take definite action. It was also urged that the calf vaccination scheme should be speeded up.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

Notice to Correspondents

The Editorial Committee regrets that, the paper supply situation having deteriorated, it has become necessary to ask correspondents again to accept a limitation on the length of letters submitted for publication. Accordingly, contributors to our Correspondence Columns are requested to note that, until further intimation is made, their communications must not exceed 350 words.

* * * * *

BETA HAEMOLYTIC STREPTOCOCCUS INFECTION OF DOGS

Sir,—As a recently demobbed veterinarian I was greatly interested and profoundly relieved to see that Dr. Hare had read a paper on "B.H.S." which I read in your number for April 20th. Almost immediately after my return to practice I was bombarded with questions by earnest dog breeders on the subject of this disease.

I gathered at first that a new disease had been discovered which, for want of a better name, was called "B.H.S." On reading Dr. Hare's paper it would seem, rather, that a new organism has been isolated which causes nearly all the canine diseases with which we have been familiar.

So that I might not confuse the new disease with old friends I read through the symptoms described in the paper, jotting them down as I went along. I found that the symptoms are as follows:—

Tonsillitis, acute and chronic; Hodgkin's disease; leukaemia; gingivitis; pyorrhoea; stomatitis; metritis; diseases of foetuses and young puppies; septicaemia; pyaemia; cellulitis; conjunctivitis; rhinitis; otitis (canker); muco-enteritis; septic broncho-pneumonia; erythema; pruritus; dermatitis, vesicular and pustular; spasmophilia; hepatitis; nephritis; rheumatism; inflammation of the anal glands. Almost with regret, it seemed to me, Dr. Hare was unable to connect symptoms of meningitis and chorea with infection with this formidable organism.

If it is indeed the case that all the above symptoms can be directly attributed to infection with B.H.S. and that the said disease responds to "sensible treatment," it would appear that all puppies from an early age should be inoculated with Dr. Hare's anti-bacterial-antitoxic antigen. Unfortunately I cannot believe that life can be so simple.

I have always been a faithful believer in the value of the use of antigens in the prevention and cure of disease and have very often used autogenous vaccines with varying success. When I received from Dr. Hare a sample of autogenous antigen I was rather surprised to find that instead of using graded and increasing doses I was instructed to use five equal doses at equal intervals. Hitherto any vaccines or toxoids that I have used have been graded and each succeeding dose was greater than the previous one. In the case of toxoids I often had to give a very prolonged course before a cure was obtained. At the moment I have in mind a number of cases of pustular dermatitis that responded very well, after repeated doses, to treatment with staphylococcal toxoid. When I have had autogenous bacterial antigens prepared they have always been made up in such a way that the number of bacteria per c.c. was known.

May I suggest that a B.H.S. vaccine and a B.H.S. toxoid be put on the market at commercial prices and that we practitioners keep records of their respective values and compare notes after a reasonable period of using them?

Yours faithfully,

The Hermitage, Church Street, Epsom. D. L. O'Brien.
April 28th, 1946.

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THE QUEUE AT THE FARM

Sir,—Your Editorial column in to-day's *Veterinary Record* has surely served to confirm the views of many of us that a certain amount of chaos will inevitably result from the policy which is envisaged by the Government with regard to the part which the veterinary profession is to play in agricultural problems.

Whereas not long ago the general practitioner was the only member of our profession who visited the farm, as far as we can make out the farmer may soon, theoretically, be receiving advice from eight different veterinary surgeons at the same time, *i.e.*, a sterility officer, an artificial insemination officer, a veterinary investigation officer, a member of the Animal Health Division, a member of the new Division of Livestock Improvement and Dairy Husbandry, an animal husbandry adviser, a poultry husbandry adviser and, last but not least, we hope, a general practitioner.* The veterinarian, already an early riser, may now have to get up even earlier to join in the fashionable habit of queueing. Surely it should be obvious to all that unless some form of unification takes place, a position, ridiculous in the extreme, will arise which can only lead to muddle, confusion and possibly to bad feeling.

Yours faithfully,

40, Chalmeley Park, Highgate, N.6. H. Williams Smith.
April 27th, 1946.

* Not all the listed visitants may be veterinary surgeons.—*Editor.*

R.C.V.S. COUNCIL ELECTION

ADDRESSES OF CANDIDATES

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—In again offering myself as a candidate for election to the Royal College Council, I do so encouraged by the fact that some 573 Fellows and Members recorded their votes in my favour at the last election, and to those supporters whose votes I hope may again be recorded in my favour and to all new supporters I would like to say that events which have taken place since last year have not in any way altered my opinions regarding the need for maintaining the autonomy and the integrity of the profession.

At a time when the tendency is towards direction both of professions and businesses by central authority, it seems to me vital to the survival of our profession as an independent body that there should be some on its Council who are prepared to fight for independence rather than to accept changes which may be expedient to individuals but which may do irrevocable harm to the future of the profession.

If elected to the Council I shall do my utmost to carry out the duties involved in such a way that none may regret having given me their vote.

Harold Burrow.

Royal Veterinary College, Streatley House,
Streatley, Berks.
May 4th, 1946.

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To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—Publication of the Government's line of action (April 6th) in meeting the declared wishes of the great majority of our profession makes me hesitate no longer to comply

with the requests of those who have long urged me to seek to vindicate the profession with all my powers within Council, R.C.V.S.

Hitherto I had believed that this could be better achieved from outside it, namely, within Council, N.V.M.A., particularly.

Events have shown that all endeavours from now onwards must be made to resist within Council, R.C.V.S., itself any further encroachment upon the privileges belonging to all members of the profession. These were dearly won by them and for them in the Charter of 1844 ("the Magna Carta of all professional organizations") and confirmed in the Act of 1881.

I fully recognize that healthy progress is to be made only by vigorous participation on the part of every individual member, so far as he or she is able to do so, in all these newer growing societies (including the newer as well as the older universities), whose ranges of activity merge into those of our own calling. To the utmost that I have been able to do so, I have always striven, on my part, to live well up to that ideal.

I insist, nevertheless, that the veterinary profession, in conformity with wise British tradition, can only survive to render effective service to the public in measure as it enjoys the privilege of self-determination to the fullest degree possible. This refers particularly to the vital matters of self-discipline and licensing of entrants.

This was a cherished principle that was respected in the First Loveday Report (1938), but was flouted, in the face of timely warning from the profession, and violently assailed with disastrous consequences and for no valid reason, as we now well see, in the Second Report (1944).

It will be my aim, should you care to elect me, to fight on to preserve for you your birthright.

J. T. Edwards.

University of London Club,
21, Gower Street, London, W.C.1.
April 6th, 1946.

. . . . . .

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—It is with a deep sense of responsibility that I offer myself as a candidate for the forthcoming election.

National affairs are at present in a state of flux; our profession, in common with most others, is involved. One cannot with reason at this time formulate any policy, but it will be my bounden duty towards our profession to safeguard its privileges and its integrity, and to subscribe to any matter which would be to its ultimate good.

In the capacity in which I now have the honour to function as Principal of a teaching institution, I should be able to make valuable contribution from this facet of veterinary service, while at the same time I have a sufficiently deep background of clinical experience to view in their true outline and perspective the serious considerations which may lie ahead.

A. A. Forsyth.

Glasgow Veterinary College.
May 3rd, 1946.

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To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—A year ago it was my privilege and honour to be a candidate at the election of Councilmen to serve the R.C.V.S. and the profession.

In view of the support I received on that occasion and at the request of many members I offer myself again as a candidate.

On this occasion, as in 1945, the profession and the Royal College are being assailed; indeed the position has detetiorated in the last few months. We are living under the threat that changes will be forced upon us which are contrary to the expressed will of the great majority of the profession.

This matter is the vital one at the present time and in this election members will have the opportunity of demonstrating their reaction.

I stand wholeheartedly for the one-portal system of entrance to the profession and for the preservation of our rights and privileges which were so dearly won and which are inscribed in our Royal Charter.

If I am honoured by your confidence and thereby elected I promise to stand firmly by my statement and not to be deviated by cajolery or threats of intimidation, no matter from what quarter these come. Rather than acquiesce under duress to something which was contrary to the wishes of the majority of the profession, my course of action would be to resign, making my reasons known for doing so, and then to submit myself to the profession at the next election.

In all other matters I will do my utmost to further the interests of our profession and to interpret in Council the views and expressions of my fellow members.

Tom Hicks.

Highfield, Sleaford.
April 30th, 1946.

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—Once again I solicit your support for the forthcoming elections to the Council of the Royal College of Veterinary Surgeons.

I am a general practitioner and, if elected, will endeavour to further the interests of the general practitioner whose representation on the Council is not in true proportion to his numbers.

I am a North countryman and appeal to the North of England and Scotland to try and obtain a better geographical representation on the Council.

Finally, I would say that I accept the Second Loveday Report providing that adequate safeguards as to the standard of education and proper status of the veterinary schools within the universities are enforced.

John D. Peele.

Elvet Waterside, Durham.
May 1st, 1946.

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To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—The Government has told the profession that it has finally decided to hand veterinary education over to the universities with or without its consent. As an ardent supporter of the uniportal system I regret this decision, but we must bow to the inevitable and the only wise course left to us is to work as closely as possible with the universities to obtain the best possible training for our students, particularly in the fourth and fifth years. The universities know little or nothing about educating veterinary students and will need all the help the R.C.V.S. can give them. The more assistance we can render them now the closer they are likely to work with us in the future.

Finance is one of the matters that will have to be discussed very carefully with the Ministry. The Loveday Report suggests that we should receive £2,500 a year, but that is totally inadequate as expenses are rising fast and besides compensation for the loss of the students' fees we are entitled to some *quid pro quo* for the forfeiture of our Charter. There are many other matters needing attention, but for the next year or two the Loveday Report and its ramifications will occupy most of our time and consideration.

Arnold Spicer.

Oxted, Surrey.
April 29th, 1946.

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To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—I accept the courtesy of the columns of *The Veterinary Record* to express, simply, my aim in offering myself as a candidate for re-election to the Council, R.C.V.S. It is to help in every way possible the advancement of the profession and the R.C.V.S. in the difficult period ahead. Particularly shall I strive to secure the optimum conditions in the schools and the universities for the continued development of veterinary education. The profession has a great past, and I believe that with wise guidance and a spirit of mutual confidence, its future will be even greater. If re-elected, I shall do my utmost to assist the R.C.V.S. to achieve its destiny.

W. R. Wooldridge.

London School of Hygiene and Tropical Medicine,
Keppel Street (Gower Street), W.C.1.
May 1st, 1946.

. . . . . .

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—I beg to offer myself as a candidate for election to the Council of the R.C.V.S.

In making this appeal for your support I do so fully realizing the duties and responsibilities that accompany this office.

I promise that I will make every endeavour to attend the meetings of Council regularly and do my utmost for the betterment and advancement of our honourable profession in all its various branches, and also do everything to uphold and maintain the dignity of the Council. As a practitioner and a member of various committees of the N.V.M.A., including being the Chairman of the Appointments Committee, I can claim to have a good knowledge and experience of the various sections of the profession, and these activities have constituted a good apprenticeship for service on the Council of the R.C.V.S.

A. J. Wright.

Macclesfield.
April 28th, 1946.